ENGINEERING NEWS-RECORD

OCT 23, 1958

PRICE 50 CENTS

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ASCE's Friel: Success reaps rec

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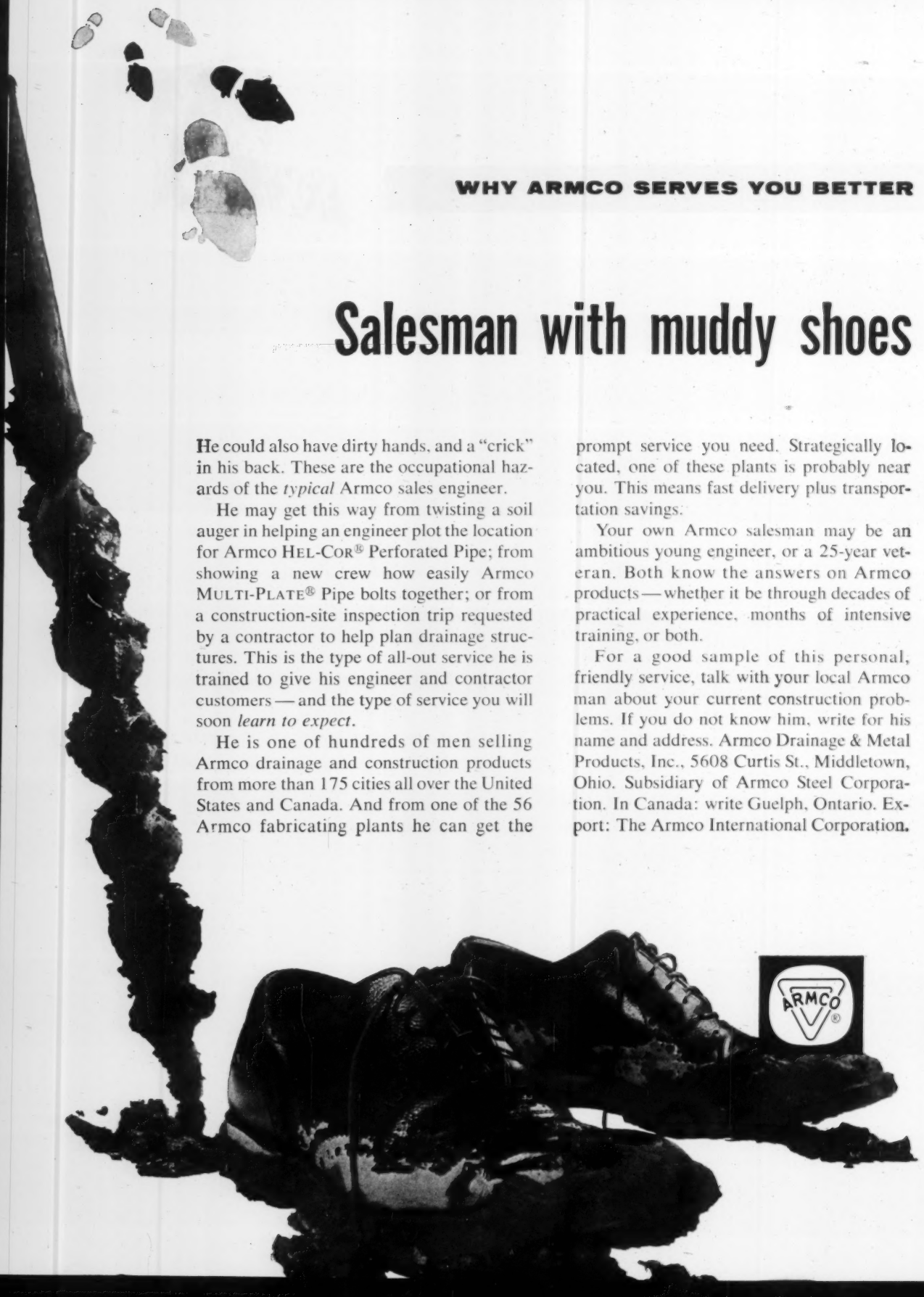

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Salesman with muddy shoes

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He is one of hundreds of men selling Armco drainage and construction products from more than 175 cities all over the United States and Canada. And from one of the 56 Armco fabricating plants he can get the prompt service you need. Strategically located, one of these plants is probably near you. This means fast delivery plus transportation savings.

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For a good sample of this personal, friendly service, talk with your local Armco man about your current construction problems. If you do not know him, write for his name and address. Armco Drainage & Metal Products, Inc., 5608 Curtis St., Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

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He increased production 20%

with an Allis-Chalmers tractor-dozer

Clyde Geraghty's Allis-Chalmers tractor-dozer really pays off in Alaska's semi-arctic conditions. The day-by-day dependability of his 66.5 net hp HD-6 makes 20 percent more operating time available.

Mr. Clyde Geraghty, President, Mitchell Truck & Tractor Service, Inc., Fairbanks, Alaska.

Dozes earth in summer

During Alaska's comparatively few weeks of summer, Geraghty's HD-6 works on road construction, clears homesites, digs basements, and landscapes. The tractor-dozer has plenty of power for these jobs.

Clears snowbound supply lines in winter

Through the long winter months, many families near the city and back in the bush are snowbound. They depend on Geraghty to keep roads to food and supplies open. His snow-clearing jobs range from a quarter mile to a full mile of road. Here's why Geraghty calls the HD-6 the best tractor we've ever owned.

Geraghty's HD-6 starts easily on the job site . . . is ready to work in a few minutes. Sure-fire, dependable direct electric starting right on the job saves from 5 to 10 gallons of fuel per month during the cold stretch.

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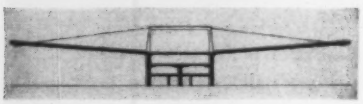
The advantages that Geraghty enjoys on the HD-6 are part of every Allis-Chalmers tractor-dozer. Models for every application range from 66.5 net hp to 225 net hp. Your Allis-Chalmers construction machinery dealer will be glad to demonstrate the machine you need on your job. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wis.

Summer in Alaska finds Geraghty pioneering roads, clearing homesites . . . during winter he uses his Allis-Chalmers tractor-dozer to keep vital supply lines free of snow.

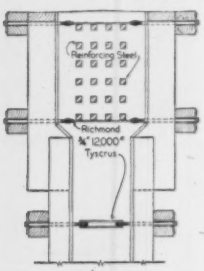
Look ahead... *move ahead* ...and stay ahead with **ALLIS-CHALMERS**

anchor walls

Richmond Tyscrus perform double function in unique hangar construction



The top walls of this air line hangar building at New York International Airport – built by Corbetta Construction Company – act as anchors for the steel cables which will support cantilever roofs over hangars on both sides. Richmond Tyscrus, at 4′ x 2′ spacing, hold the forms in place for a full-height continuous pour of these 12″ x 30′ x 100′ anchor walls. In addition, the Tyscrus support the reinforcing steel cages of 24 1⅜″ square bars, thermit-welded to provide 100 ft. long continuous reinforcing in the top beams of each wall. Weight of this reinforcement runs around 240 lbs. per foot.



TOP SECTION, ANCHOR WALL

An ingenious system of pouring pockets in the forms permitted easy access to the Tys for installing Tylags on the closing side. Assembly and stripping of forms was fast; Richmond 2-strut, ¾″ Tyscrus (published safe load 12,000 lbs., ultimate strength 20,145 lbs.) have self-cleaning threaded connections.

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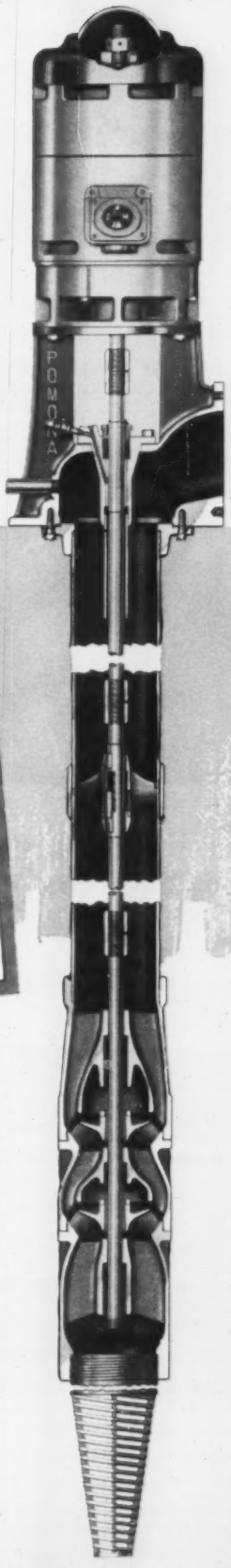

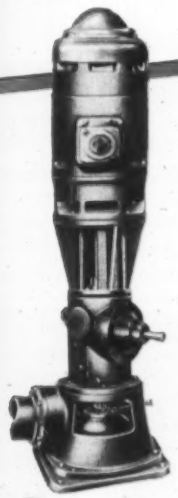

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"T-1" Steel reduces weight of 4-in-1 bucket by 35%, boosts payload by 1,200 pounds

"Our engineers specified USS "T-1" heat treated alloy steel in the construction of our 4-in-1 skid shovel bucket because we could reduce the original weight by 35%. What's more, we could add one-half yard to the bucket capacity," says Mr. Edward Drott, President and Chief Engineer, Drott Manufacturing Corporation, Wausau, Wisconsin.

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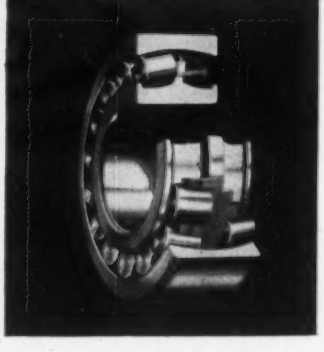
How to get a big lift



Torrington Spherical Roller Bearings in critical positions on the Manitowoc shovel help it handle tons of earth and rock with ease and speed!

Accurate roller-to-race conformity and positive roller guidance of Torrington Spherical Roller Bearings insure long, trouble-free service. They are used on the swingshaft, PTO sprocket support, front drum main shaft, front and rear drums, countershaft, PTO pilot and vertical travelshaft. These self-aligning bearings insure smooth anti-friction operation and efficient transmission of power despite heavy radial and thrust loads, housing misalignment and shaft deflection.

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PLANT LOCATION—Saugus, California
PLANT SIZE & MODEL—Madsen Model 391 5000-lb. HOT ROD Asphalt Plant
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DRY DUST COLLECTOR—Madsen 12' dia. round cyclone
DRYER—Madsen 84" x 30'

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Industrial Asphalt, Los Angeles, California, owns and operates the Madsen Model 391 HOT ROD Asphalt Plant shown above. Plant is located at Saugus, California.

MADSEN Asphalt Plants are built in capacities from 1000 lbs. per batch to 6000 lbs. per batch. Whatever your asphalt plant requirements are, there's a MADSEN Plant designed for you.

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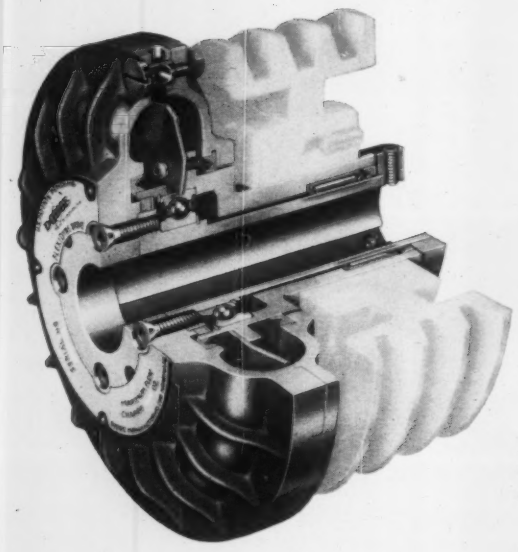

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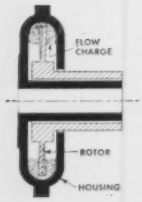

The "dry fluid" in Flexidyne is tiny heat-treated steel shot. A measured amount, called the "flow charge," is contained in the housing, which is keyed to the motor shaft. Inside the housing is a rotor, free to revolve relative to the housing, but connected to the load.

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Reader Comment

A reader challenges an author . . .

Are Beam Seats Necessary?

Commenting on the article, "How to Get Better, Less Costly Welded Connections," by Van Rensselaer P. Saxe, Baltimore consulting engineer (ENR Aug. 21, p. 34), Heathcote W. Lawson, Schact Steel Construction, Inc., engineer, Hillside, N. J., questions several conclusions. He argues that no connection has yet been devised for welding beams to columns that is as simple, efficient and economical as two bolts in the beam bottom flange connecting to a seat designed to carry the beam reaction. Here are his objections and the author's replies:

Lawson: Two bolts in the bottom flange constitute an adequate erection connection.

Saxe: Even with excessive guying, they are not adequate to prevent dangerous sway. No one would erect a riveted frame more than two stories high with such a connection. Furthermore, two bolts do not make a tight enough connection to resist welding shrinkage stresses; hence, uniform plumbing of columns would be had.

Lawson: Holes for these bolts, as used in Type A connections, do not reduce the beam section.

Saxe: Because of the continuous-beam design, the lower flange and the plate are in compression. So more steel area is needed in these components to compensate for the holes.

Lawson: Fabrication or assembly of the top plate for Type A is not difficult.

Saxe: This plate is usually welded to the beam in an upside-down position. I have found that the shops do have difficulty maintaining correct positioning of this plate for connections to column webs.

Lawson: I question the implication that out-of-square columns, or mill tolerance in beam lengths, are any less a problem in the A-B connections.

Saxe: If the columns are straight, the beam can be lowered into place vertically. This technique also can be used with the average mill-tolerance twisted column. But you should not overlook the possibility of columns being delivered with twist exceeding mill tolerances. In those cases, no difficulty is experienced in positioning the beams when erection clips are used, as shown for Type A-B connections. The small contact area of the clip with the column and its beveled shape minimize obstruction. If the column flange is badly out of square, the beam can be swung into place sidewise from the direction in which clearance is greatest.

Lawson: Closure distance is 1 in. for the A connection, whereas $\frac{7}{8}$ in. is used for Type A-B with the same mill tolerances.

Saxe: One inch is correct for connections with brackets for supporting vertical loads. For Type A-B, $\frac{7}{8}$ in. was used to show that vertical loads can be taken by direct welds between beam web and column. This design eliminates the bracket, which is a waste of material.

Lawson: I doubt that a $\frac{5}{16}$ in. fillet can be used generally to connect the A-B beam ordered to $\pm\frac{1}{8}$ in. tolerance.

Saxe: The $\frac{7}{8}$ in. clearance is an average allowance for Type A-B, and the $\frac{5}{16}$ in. weld is the actual size required for the beam web. This usually is indicated on drawings; for both designers and fabricators know that the distance of every beam end from its support will be different. In estimating weld-material requirements, however, most fabricators add another $\frac{1}{16}$ in. to the weld size for average conditions. This was done in computing weights of welds for the table in the article.

Lawson: Use of plates does not necessarily result in greater over-all cost of connections.

Saxe: My experience has been that plates for Type A cost more than those for Type A-B.

Lawson: I question the implication

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 300 W. 42nd St., New York 36, N. Y.

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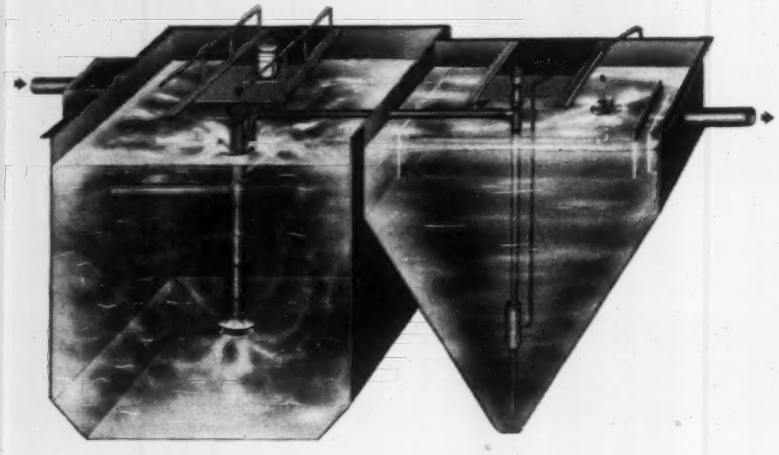

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. . . Reader Comment

that cover plates to increase the resisting moment at beam ends can be used for A-B connections only.

Saxe: I see no reason why plates cannot be used for Types A and B.

Lawson: The weights of connections given in the article are not a true indication of the relative cost of riveted vs welded details. The welded connection provides full continuity, while the riveted connection is for shear alone.

Saxe: There was no attempt in the article to compare a steel beam designed for simple supports with a continuous beam. However, the weight of the shear connections is a true indication of relative costs.

Lawson: There are some features of the A connection, as shown, that are not in accord with good practice:

- No backup plate is indicated at the top-plate butt weld.
- Use of ¾ in fillets at plate ends.
- Overhead field welds on the bottom plate, requiring scaffolding. (The plate should be wider than the beam flange for downhand welding.)
- The stiffener plate should be 4 in. wide, not 6 in.
- Its thickness should not exceed that of the beam web, instead of the ¾ in. shown.

Saxe:

- The backup plate is a specification item, not usually shown on detail drawings.
- I see no objection to a ¾ in. weld.
- Shop fabricator's choice: Furnish more material or do overhead welding.
- Stiffener plate as indicated is correct.
- Stiffener-plate thickness is correct as shown.

Lawson: The statements about tolerances and fitting difficulties of the B connection are true enough, but the same objections apply to the A-B connection. Bugs in the A-B connection, as shown, are:

- The butt welds called for are ¼ x 6 in. The flange width is 7 in., of which 3 in. is ⅜ in. thick and 4 in. is ¼ in. thick. With flanges limited to 6 in. width, the total flange area would not be developed.
- The forged clips can serve as backups for the butt welds, but only when the angle width is equal to the beam-flange width.
- When the column is out of square, it is difficult to enter the forged angle into the slotted seat.

Saxe:

- Butt weld shown is an average of actual weld requirements, stated this way to simplify estimating weight of weld material as previously explained.

(Reader Comment continued page 12)

large capacity ...modern portable CRUSHING–SCREENING PLANT

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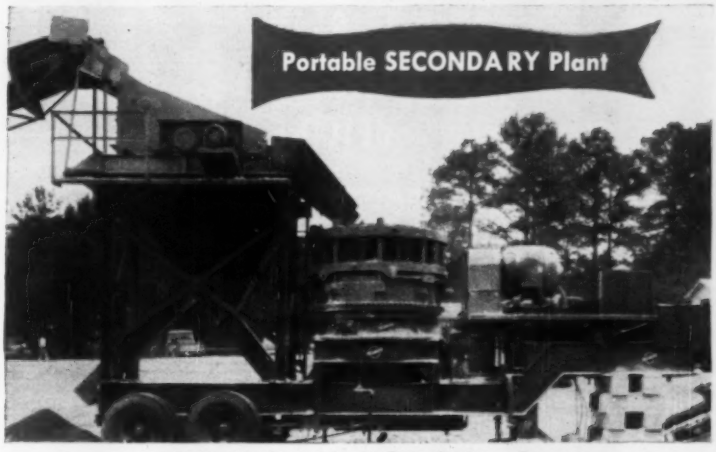

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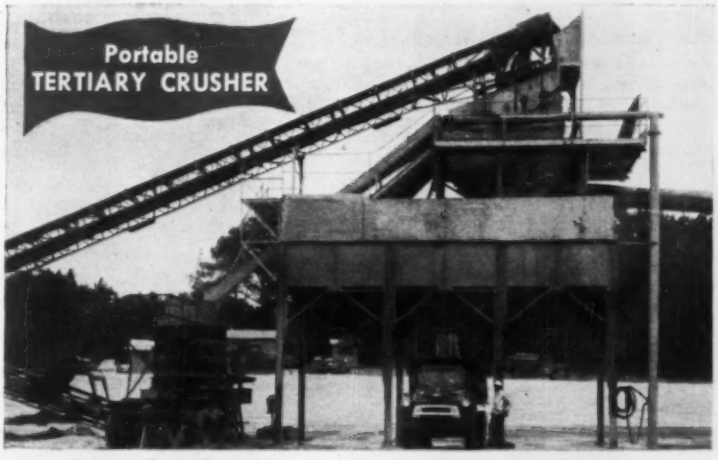

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P-22

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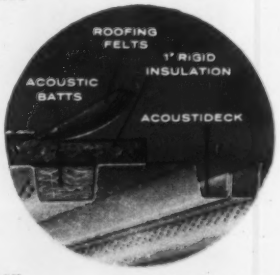

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RD-18

. . . Reader Comment

• Forged clips do serve as backups for butt welds. If the clips are not long enough, then specifications call for 1 x ⅛ in. backup plates.

• I have already explained the technique of erecting beams with forged angles and slotted seats when columns are out of square.

Lawson: It is generally cheaper to buy material to mill tolerances even if it involves added detail material. And it is advantageous to reduce field welding to a minimum, even if it entails an increase in the total amount of welding.

Saxe: The article emphasized the advantages of ordering material to mill tolerance.

Hidden Economics

SIR—ENR should be doing more to help engineers in the economic applications of their profession. Your article on Wilson Lock (Aug. 7, p. 28) reminded me that you earlier published a comprehensive article on proposed work at Wilson Lock (Aug. 30, 1956, p. 34) which was to cost $35 million to reduce time in passing the lock. My limited knowledge of canals and barges is that "time" is one thing they have plenty of, and its consideration is not of vital importance in barge operation.

The first article should have stated the expected lockages and savings in dollars. Then after the lock is in operation for a year or so, the actual economics should be published. This is almost never done with city, state or national projects and is frequently omitted from commercial projects. The penalty for poorly projected commercial ventures is "red ink" on the balance sheet. For government projects, the penalty is higher taxes.

If we are to keep "pork barrel" bills within bounds and look forward to a cessation of inflation, much more emphasis is necessary on the economics of construction projects.

GEORGE R. WADLEIGH
Consulting Engineer
Hastings-on-Hudson, N. Y.

CALENDAR

National Society of Professional Engineers, fall meeting, St. Francis Hotel, San Francisco, Calif., Oct. 23-25.

American Concrete Institute, regional meeting and headquarters dedication, Statler Hilton Hotel, Detroit, Oct. 27-28.

International Asphalt Congress, third meeting, Paris, France, Oct. 27-29.

Water Resources Conference, Washington State Institute of Technology, campus of State College of Washington, Pullman, Wash., Nov. 6-7.

Galvanizers Committee, American Zinc Institute, 39th meeting, Pick-Roosevelt Hotel, Pittsburgh, Pa., Nov. 6-7.

Richmond Memorial Hospital in Richmond, Va.

Architect: Samuel Hannaford & Sons, Cincinnati, Ohio
Associate Architect: Baskervill & Son, Richmond, Va.
Engineer: Watson & Hart, Greensboro, N.C.
General Contractor: John Tester & Son, Washington, D.C.

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(Above, and at left) The Cora Kelly School in Alexandria, Va.

Architects: Robert A. Willgoos, Dwight G. Chase, Alexandria, Va.
General Contractor: John Tester & Son, Washington, D.C.

3 top contractors tell how **Transite Sewer Pipe** helped keep installation costs low on the Allegheny County Sanitary Authority sewage project (Allegheny County, Pa.)

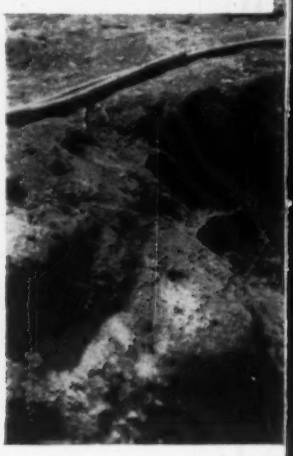
"Transite saved us considerable labor especially when we were working in 18- to 28-foot trenches . . ."

says W. R. Davies, W. R. Davies Company
Pittsburgh, Pennsylvania

"For the Allegheny County Sanitary Authority we used Transite Pipe for Sanitary Sewers because it is faster to install, lighter, and more readily handled than the other materials specified as alternates. Transite saved us considerable labor especially when we were working in 18- to 28-foot trenches.

"Another part of our 'Authority' contract included the installation of 5,300 feet of Domestic Water and Fire lines at the 150 MGD capacity Pittsburgh Sewage Treatment Plant. We used Transite Pressure Pipe for this entire job. Our costs were low because it is faster to install."

W. R. Davies Co. installation.



"In a remarkably short time, our men installed two miles of Transite . . . even though they worked below the adjacent river level . . . and between railroad tracks and one of the most congested highways in the county . . ."

says P. A. Benintend, Ben Construction Company
Pittsburgh, Pennsylvania

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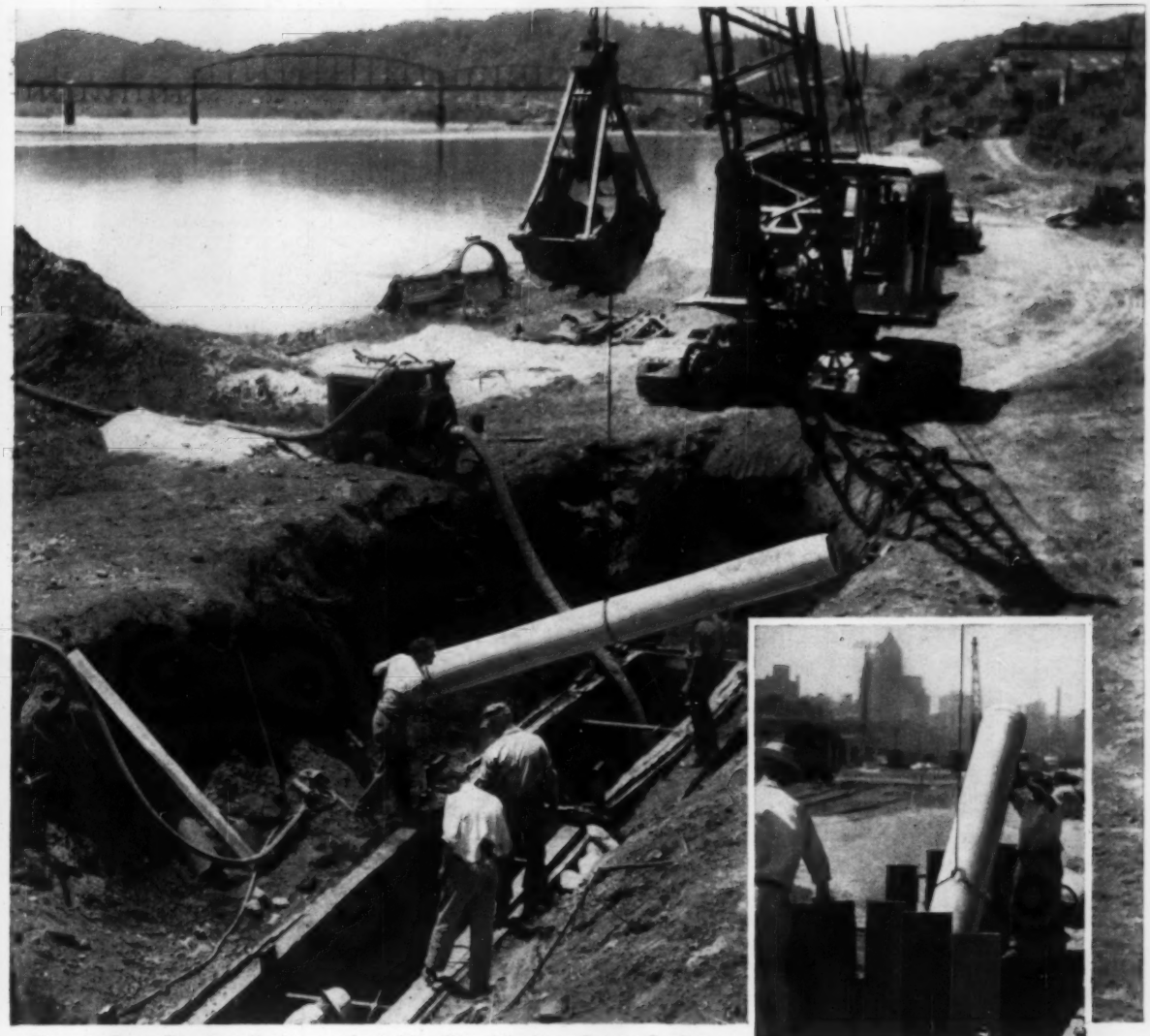
"We installed Transite Sewer Pipe in some of the toughest locations on this job."

says D. C. Rothey, Project Manager
Harrison Construction Company
Pittsburgh, Pennsylvania

"In our stretch down along the Allegheny River we were constantly 5 to 14 feet below normal pool stage level. Final inspection revealed no infiltration."



Transite Sewer Pipe installations on the $100-million Allegheny County Sanitary Authority Project. Shown here is part of Harrison Construction Co. contract.

Ben Construction Co. installation.

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ENGINEERING NEWS-RECORD

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THE CONSTRUCTION WEEK

BILLION DOLLAR HYDRO PROJECT?—Official go-ahead is coming soon on first-stage construction of the Wenner-Gren hydro scheme in British Columbia, according to B.C. Land and Forests Minister Ray Williston. First units to be built, he says, would be a 700 ft high dam on the Peace River and a 3 million kw power plant. Investment figures mentioned for the project have ranged up to a billion dollars (ENR Nov. 7, 1957, p. 27).

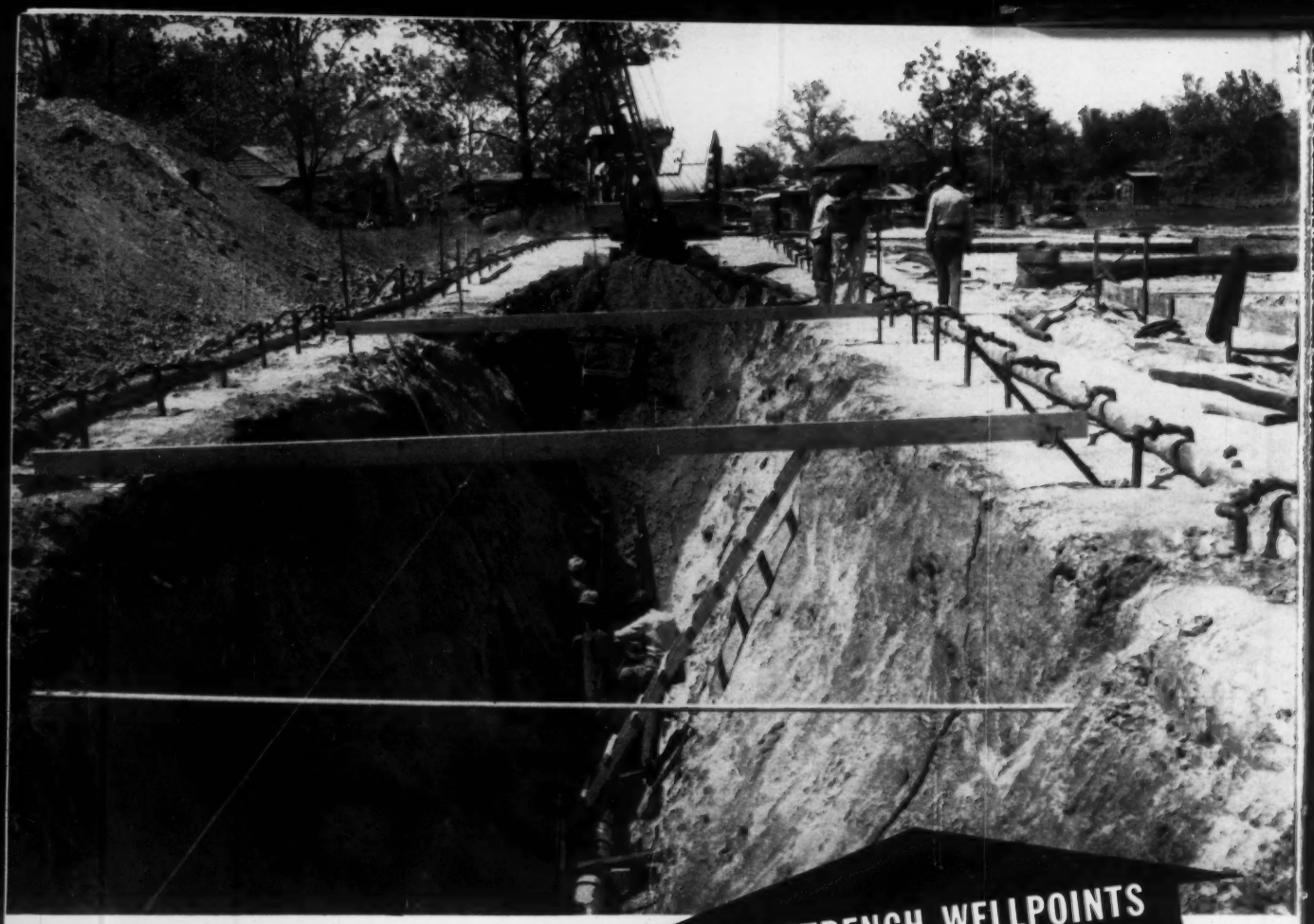
BROKE AGAIN—Federal Housing Administration will run out of mortgage insurance commitment money early in November. It will have to wait until the next session of Congress for new funds. Instead of firm commitments, FHA is sending letters promising to insure mortgages. The process may slow operations of big homebuilders who use advance commitments from FHA to get construction financing.

FOR WANT OF A STAMP—Miscalculation of postage cost a low bidder a job in upstate New York. The Post Office returned J. L. & R. Construction Co.'s sealed bid on a pipelaying job because of insufficient postage. Remailed, the proposal reached the Erie County Water Authority after the deadline and was sent back unopened. Later the Hamburg, N. Y., firm discovered its bid was $200 under the winning bid.

NEW STEEL JOISTS COMING—Beginning January 1, engineers and architects will have a wider selection of open-web steel joists. The Steel Joist Institute has redesigned the 17 joists in the S series to a 20,000 psi tensile strength and added 18 more to the series. Specifications and load tables are now available from SJI for all 25.

RIO GRANDE ON RAMPAGE—The Rio Grande is living up to its name this week. The river has topped its banks for a 150 mile stretch, from Falcon Dam to Brownsville, Tex. It's six miles wide in some places. Damage to highways, railroads, crops and other property is running in millions of dollars. Twelve to fourteen thousand people have fled their homes. Even with no more rain, the river won't be back in its banks for a month, according to one estimate.

ANYONE FIND A BRIDGE?—Pennsylvania's Auditor General, Charles C. Smith, is trying to locate a Beaver County highway bridge. He claims it disappeared without a trace after it was ruined by a highway accident three years ago. A new structure has been built, but the accounting office can't find out what happened to the salvageable material from the original bridge. Mr. Smith seems to think it was stolen. The Highway Department doesn't think so.



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WASHINGTON OBSERVER

- **Execs appraise construction outlook**
- **More runway-taxiway business coming**
- **"Buy American" ruling still up in air**
- **Battleground: Construction statistics**

● **The outlook for construction—and the factors affecting it—came in for appraisal** at the meeting of the Business Advisory Council. That's a group of blue-chip business executives who meet regularly with top officials of government to swap information and views.

Next year will be a good year for construction, according to S. D. Bechtel, president of the Bechtel Corp. Council member Bechtel noted that housing and public construction brought the big rise this year.

Private construction may have to be more of a force in 1959 if construction is to hold at 1958's level or better, he reports.

This year's stimulus to housing construction has about run its course, T. V. Houser, ex-chairman of Sears Roebuck, told the group. He indicated he sees nothing in the economic situation now to keep housing next year as strong as it has been in 1958.

Capital investment in plant and equipment is not yet showing real recovery, Mr. Houser finds. Plans to spend on new plants are looking up, but the actual appropriations by company management haven't yet been made.

—

● **New design studies promise more runway-taxiway construction at U. S. airports** when they begin modernizing to take care of jets. Existing airports can handle more traffic, according to a University of California study for the Airways Modernization Board, if new high-speed taxiways are built at angles of 30 to 45 deg off the main runway. Now, they're built at right angles to the main runways.

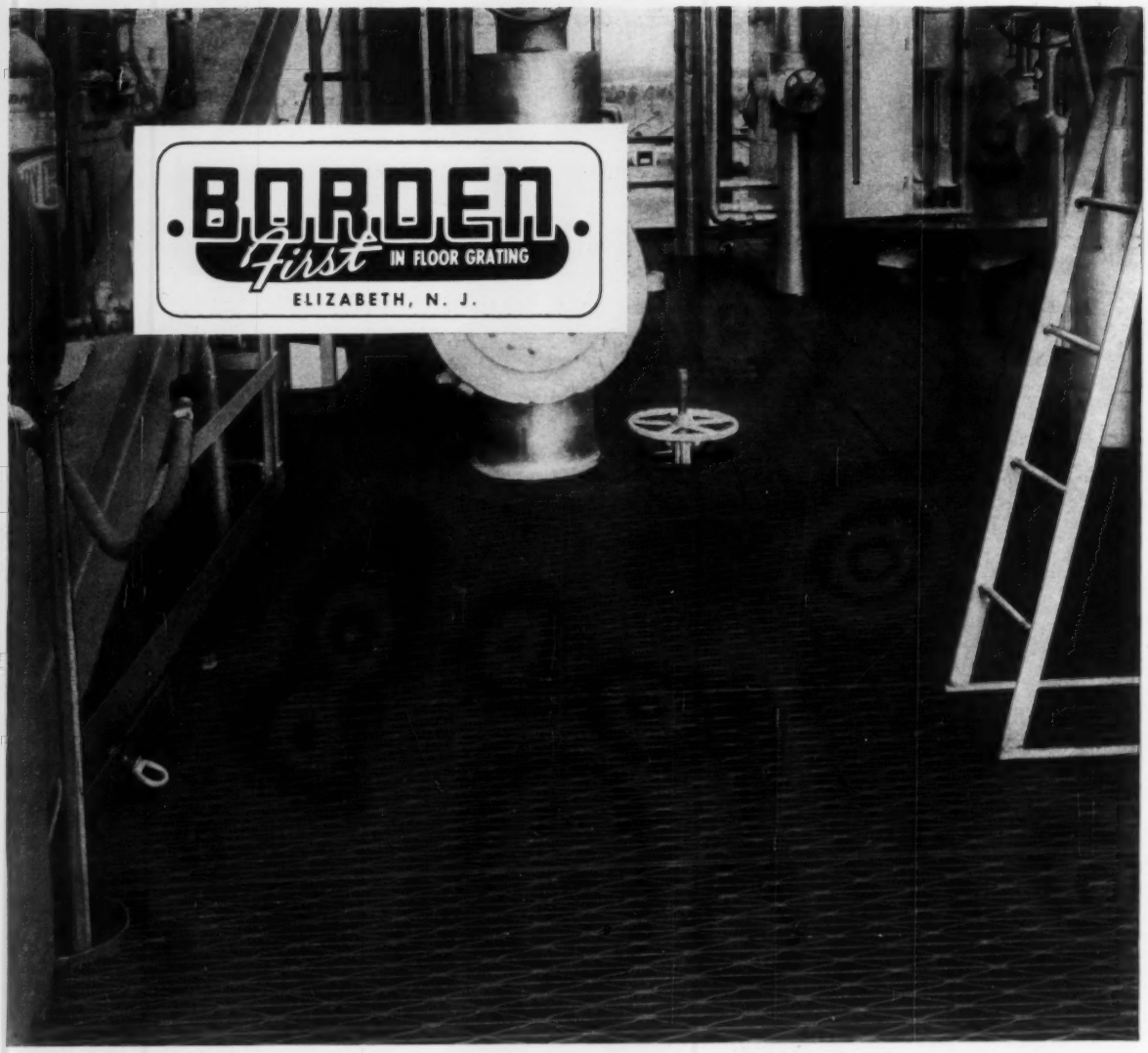
The new taxiway design can handle planes at 40 to 60 mph depending on the type of aircraft—and saves as much as 20 seconds per plane on the main runway.

—

● **A ruling on validity of state "Buy American" clauses in highway contracts still is some time off.** The Bureau of Public Roads has completed a survey of states that have either laws or contract provisions aimed at requiring domestically produced materials in the federal-aid program. The evidence is being prepared for Secretary of Commerce Weeks, who will send a recommendation to President Eisenhower. Chances are the Administration will finally rule against such "Buy American" clauses. A Texas provision has already been turned down.

—

● **The bureaucratic fight over construction statistics continues.** The Labor Department is working up a counter offer to last week's disclosure that Commerce Secretary Weeks would trade Labor Secretary Mitchell unemployment statistics in return for Commerce taking over construction statistics. Labor Department now is offering to have Commerce's Census Bureau gather the construction figures, but leave the evaluation to Labor. The Budget Bureau is going to demand a solution. It's putting a ceiling on research funds to force an agreement.



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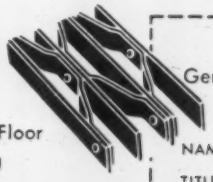

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"ASCE should do more to support research in civil engineering"

About overseas competition
"U.S. contractors won't stand a chance against foreign competition in 5-10 years"

About airports
"Airports, like the movies, need their popcorn and soft drink concessions"

About hydrologic studies
"Recognize the danger of asking more data as a substitute for professional ability"

About engineers
"We need engineer humanists (with) judgment, intuition and imagination"

About meetings
"It is not necessary to come to (agreement), but to learn what others are doing"

. . . At ASCE's Biggest Meeting

A registered attendance of 2,548 made the convention of the American Society of Civil Engineers, last week in New York City, the largest in the organization's 106-year history. But the convention was notable for reasons other than size:

- It had a distinctly international flavor due to joint sessions with the International Association for Bridge and Structural Engineering (see p. 22).
- It voted to submit to the membership an amendment to the constitution that would change the names of the three grades of membership and introduce legal registration as a qualification for the highest grade.
- It heard President-elect Francis S. Friel declare that his major objective would be to raise the remainder of the $800,000 ASCE quota for the new United Engineering Center in New York. (For more on Mr. Friel, see p. 54.)
- It devoted large, general membership luncheons each day to presentations by notable speakers on timely topics: Urban Renewal, Senator Precott Bush (R., Conn.) of the Senate subcommittee on housing; Engineers and the World Bank, Gail A. Hathaway, consultant to the bank and past-president, ASCE; Orienting Secondary School Education to Student Ability, John J. Theobald, Superintendent of Schools, New York City, and a longtime member of ASCE; and Soil Mechanics in Action, Karl Terzaghi, originator of the science of soils, who was honored at the luncheon on his 75th birthday.

The quotes above show the range of discussions, formal and informal.

• **Members may become Fellows** – The amendment to the constitution, which will soon be voted on by the entire society membership, provides that the present grades of Member, Associate Member and Junior Member be changed to Fellow, Member and Associate Member. If the amendment gets a two-thirds affirmative vote, everyone on the rolls would automatically be moved into the new grades. No one thereafter, however, could be elected directly to the grade of Fellow, as is now possible for the grade of Member. New Fellows would have to move up from the Member grade. Fellows would also have to be legally registered as engineers. That's not a requirement for the present grade of Member.

• **United Engineering Center** – The campaign to raise funds for a $10 million headquarters building will be pushed with increasing vigor in the months ahead. To date only about $130,000 of ASCE's $800,000 share has been pledged. All local sections of the society have now organized personal solicitation committees. Goal for the entire quota is early next year.

A site—across the street from the United Nations—has been selected and the architectural firm, Shreve, Lamb & Harmon of New York City, has the preliminary plans for the new building well along.

Here's a report on several of the technical division sessions:

• **Construction**—Overseas construction is big, but risky, ASCE's contractor group was told. Henry C. Boschen, vice president of Raymond International, said success in domestic operations won't necessarily insure success in contracting overseas.

He offered this advice to would-be overseas builders:

- Don't over-extend yourself; remain flexible; work with the client's money.
- Surround yourself with safeguards to insure payment anticipated by the contract.
- Set up a subsidiary firm composed largely of local citizens who know the language and have the support of local government and business. (Don't buy favors from public officials.)

E. Warren Bowden, executive vice president of Walter Kidde Constructors, New York City, said today's automated manufacturing buildings require many engineering skills and a maximum of communication among owner, engineer, field forces at all stages of work.

In the field, Mr. Bowden emphasized, a project requires a well integrated performance involving careful planning by heads of the construction operation and preparation of "painstaking operational time schedules."

All major subcontracts must be negotiated with absolutely clear understanding among all concerned on what is to be handled by each subcontractor and how each will dovetail with the others.

• **Sanitary Engineering**—Four California engineers reported designer satisfaction

. . . ASCE's biggest meeting: Here are reports on the Sanitary Engineering, Hydraulics,

after a year of operation of Los Angeles' Hyperion outfall. The $2.7 million pipeline discharges digested sewage sludge seven miles offshore at a 320 ft deep section of Santa Monica Bay. The sludge is remaining well submerged, according to Norman B. Hume and Charles G. Gunnerson, assistant director and civil engineer, respectively, of the Los Angeles Bureau of Sanitation, and Robert D. Bargman and Charles E. Imel, assistant engineer-superintendent and sanitary engineering associate, respectively, at the Hyperion treatment plant.

• **Hydraulics**—Several conclusions on spillways can be drawn from operating experiments at Bonneville, The Dalles, McNary, Chief Joseph and other northwest dams, according to R. B. Cochrane of the Corps of Engineers' Portland (Ore.) District:

• Individually operated tainter gates are superior to vertical-lift gates operated by a gantry crane.

• If vertical-lift gates must be used, keep spillway crests above flood tidewater, make gate bottoms sharp and try to incorporate a split gate arrangement.

• Cables seem to be as good as chain and sprocket equipment for holding tainter gates open.

• High-head outlet conduits should be steel-lined for some distance below the valve to shield the concrete from the eroding action of high velocity jets.

• Limit switches should be installed in the system to prevent improper operation of the gates.

Maintenance dredging in one section of the St. Lawrence ship channel is costing $2.75 a cu yd this year, according to Prof. Raymond Boucher, of Ecole Polytechnique, Montreal. (This is downstream from Montreal—the Seaway extends upstream.)

Original dredging in the area from 1911 to 1937 averaged 31 cents a cu yd. Maintenance dredging from 1937 to now has averaged $2.24. A major factor in the high cost is the short operating season—three months a year. Despite the high cost per cu yd, the present suction dredging method has been judged cheaper than other measures. Two methods considered and rejected were canalization by dikes and protection of the channel by sheet piling walls below water.

Those concerned with collection of rainfall and stream flow data and other hydrologic information were reminded

Structural Engineers Describe Latest

Engineers from all over western Europe came to New York City last week to swap research results with American engineers. The interchange of information took place in eight sessions on structural theory and design jointly sponsored by the International Association for Bridge and Structural Engineering and the American Society of Civil Engineers and held during the ASCE annual meeting (see above).

The sessions were devoted to ultimate-strength theory for steel and reinforced concrete, folded-plate structures, thin dams, dynamics and fatigue of metals, stability considerations in metal structures, prestressed concrete and shell structures.

In welcoming the visitors, Louis R. Howson, ASCE president, expressed the appreciation of American engineers for the opportunity to exchange information. He predicted better and more economical structures would result from the meeting.

Prof. Fritz Stussi, IABSE president, hailed the joint sessions as a means of international collaboration for progress. The discussion of new developments in structural theory and design is well worthwhile, he said, even if they are not applicable at present in some countries.

"It's not necessary to come to unanimity of opinion," he said, "but to learn what others are doing."

• **Plasticity in steel**—British and American engineers held the limelight during the sessions on ultimate-strength theory.

Prof. John F. Baker, Cambridge University, traced the development of the plastic method of designing steel structures. He described the application of this new design theory to several buildings in Great Britain, including a four-story laboratory at Cambridge University (ENR Oct. 2, p. 38). In the U. S., the theory is not recommended at present for structures more than one story high or for those subject to dynamic loading.

Prof. Lynn S. Beedle, Fritz Engineering Laboratory, Lehigh University, summarized for the international group the results of tests made on steel structures at Lehigh. The tests verify the theory, Professor Beedle said. Prof. Daniel C. Drucker, Brown University, outlined the latest techniques for making a plastic analysis.

• **New concrete developments**—Prof. A. L. L. Baker, University of London, took the spotlight in the session on ultimate-strength design of reinforced concrete. The design theory he outlined is similar to plastic design of steel structures.

Charles S. Whitney, consulting engineer, Ammann & Whitney, New York City, showed pictures of several folded-plate structures designed by his firm and constructed in the U. S. He also presented charts comparing costs of folded plates with costs of other types of construction for various spans.

• **Double-curved shell dams**—Application of thin-shell theory to dams was described by Prof. Gido Oberti, Polytechnic School of Turin and Experimental Institute for Models and Structures, Bergamo, Italy. He called attention to the economy of material in several double-curved dams built to date in Italy.

Stresses in these structures are a combination of membrane and slab effects. Mathematical analysis of the stresses is very difficult; so Professor Oberti tests $\frac{1}{10}$th scale models to determine the behavior of the thin dams.

Alfred L. Parme, manager, Structural and Railways Bureau, Portland Cement Association, Chicago, contended that mathematical analysis of shells could be simplified with the aid of design tables based on solution of differential equations.

Similarly, Prof. A. M. Haas, Delft Institute of Technology, the Netherlands, said that corrections to the membrane theory for shells to account for boundary conditions could be simplified by use of analogies. He first showed how the solution for a beam on elastic supports could be applied to thin cylindrical shells. Then he demonstrated how the solution for a cylinder could be used for computation of stresses near the boundaries of double-curved shells.

• **Progress in dynamics**—The advantages of model tests were also pointed out by George S. Vincent, Bureau of Public Roads, Washington, D. C. He said model tests have been used successfully to predict the behavior of several major suspension bridges under static and aerodynamic wind loading.

Undoubtedly, when they are feasible, studies of full-size structures under actual service loads can be even more fruitful than model tests or mathematic analysis. Buildings in earthquake regions present such an opportunity. Prof. George W. Housner, California Institute of Technology, Pasadena, showed the international group data resulting from examination of buildings damaged

Developments Here, Abroad

that quantity of data is no substitute for quality. Donald W. Van Tuyl, of the U. S. Chamber of Commerce's Natural Resources Department and chairman of the ASCE task group on hydrologic data, told an audience: "A critical examination of hydrologic data programs shows some overemphasis on volume . . . the need of the user is not always for more data but rather for the right data."

Mr. Van Tuyl said the studies lead to several recommendations:

- Scattered efforts in the federal hydrologic data program should be regrouped for closer coordination.
- Private engineers should keep such records of their hydrologic data as would make possible its eventual publication.
- Control of hydrologic data programs should be in the hands of persons of professional level.

• **Waterways and Harbors**—Inland "tides" were described by Rex A. Elder, head of the Hydraulic Operations and Tests Section of the Tennessee Valley Authority. Discharges from the turbines at Wilson Dam after completion of a proposed modernization program will cause tides as high as 5.6 ft to rise in 1½ hours, according to model tests. Resulting cross currents would make entrance to the navigation canal difficult. However, the model tests led to modification of the designs correcting the navigation problem.

• **Power**—Reed A. Elliot, chief water control planning engineer for the Tennessee Valley Authority, drew lessons from TVA's past experience in selecting thermal generating plant locations. He stressed the importance of:

- Good topographic map coverage to reduce field explorations in finding possible sites and eliminating the least promising ones.
- Proper subsurface investigations by extensive borings to get foundation design information.
- Terrain examination to reveal physical features that may be exploited in design of effective condenser water systems.

A. J. Michael of J. G. White Engineering Corp., New York City, said capital costs of gas turbine installations are generally less than steam plants due to elimination of the steam generator and its auxiliaries. He said present experience indicates that if gas turbine maintenance is more frequent than for stream turbines, it will be offset by elimination of maintenance needs for the steam generator and equipment.

by earthquakes. These data enabled him to explain the behavior of structures under seismic forces.

Prof. Nathan M. Newmark, University of Illinois, outlined a numerical method of analysis for structures subjected to dynamic loads.

• **New fatigue theory**—IABSE President Fritz Stussi, professor of wood and steel construction, Swiss Federal Institute of Technology, Zurich, presented a general theory for determining the fatigue strength of metals. Backed by extensive tests, this theory utilizes factors that take into account the effects of creep, notches, temperature and cold working.

• **Structural stability**—Buckling problems and the latest methods of solution were capably handled by Prof. C. E. L. Massonet, University of Liege, Belgium; Prof. Bruno Thurlimann, Lehigh University, Bethlehem, Pa., and Prof. Georg Wastlund, Royal Institute of Technology, Stockholm.

In discussing the behavior of members of continuous frames, Professor Massonet warned of the danger of torsional buckling occurring before plastic hinges form.

• **Prestressed concrete**—Developments in prestressed concrete in Europe were outlined by Yves Guyon, technical director, Technical Society for Utilization of Prestress (STUP), Paris, and Frederick S. Snow, consulting engineer, London. They showed photographs of many outstanding structures constructed by this method.

Prof. T. Y. Lin, University of California, Berkeley, similarly described applications of prestressing in the U. S., but he gave particular attention to prestressed lift-slabs.

Prof. Hurbert Rusch, director of the Laboratory for Testing Building Materials and Structure, Institute of Technology, Munich, said greater economy of structures would result if materials with a high strength-density ratio are used; if the most advantageous structural system is selected (he favors double, haunched cantilevers) and if prestressing is applied to improve internal distribution of stresses.

Professor Rusch also contended that it is uneconomic to specify a fixed, relatively low allowable unit stress for reinforcing bars with the objective of preventing wide cracks. He said that the size of cracks depends on the bond of the bars to the concrete; therefore, it is logical to permit higher stresses for larger ratios of bar circumferential area to cross-sectional area.

• **Thin-shell roofs**—Design and construction of the world's largest thin-shell roof was described by Nicolas Esquillan, director, Boussiron Enterprises, Paris. The immense concrete roof covers the Palace of Exposition of the National Center of Industries and Techniques on the outskirts of Paris.

The roof is triangular in plan, supported at three points. Rising to a height of 152 ft, the curved roof spans 720 ft between supports (ENR April 17, p. 45).

Anton Tedesko, vice president, Roberts & Schaefer, called attention to a new development in thin-shell construction. Up to now, cylindrical shell roofs have been stiffened at regular intervals by deep ribs. His firm is now designing multiple ribless shell roofs.

• **Highways and City Planning**—This joint session stressed the absolute interdependency of highway planning and city planning. Cities generate traffic flow; traffic flow builds cities. Land use is a function of highway construction, and highway construction must be determined by land use.

According to Roger L. Creighton, assistant director, Chicago area transportation study, it is not enough that there be cooperation between city planners and highway engineers. There must be joint planning between the two.

While this idea was generally expressed by all speakers at the session, the consensus was that there is a wide difference between the desired and the actual relationship between the two. Some speakers stated that within the last year or two city planners have enjoyed a more prominent role in planning highways than they had previously, but they claim there is a great deal of progress yet to be made in this respect. Too often, it was agreed, highway engineers have advanced to the point where they will listen politely to the city planner but only after the city man injects himself uninvited into the urban highway picture.

John S. Tsaguris, associate-planning director, Tucson (Ariz.) City-County Planning Department, decried the lack of status of city planners. He suggested that colleges should teach every civil engineer at least the elements of city planning. "Unless this is done," he said "a socio-economist will run away with the show." He also suggested that every state highway department should have on its staff a man qualified to work with city officials in discussions on urban highway location and design and stated that this man should have the title of planning engineer.

Test Bridges Fail Too Soon

Three of the 50-ft-span test bridges at the American Association of State Highway Officials test road in Ottawa, Ill., have failed. Failure was expected, but not so soon. However, it was not a case of complete collapse or beam failure, but excessive deflection—about 3 in.

Fortunately, the engineers were able to take complete recordings of all stresses and strains and deflections in the bridges. From these they will be able to determine what happens when such bridges are under-designed or overloaded.

The bridges are made up of wide-flange, steel girders that are simply supported, not continuous. They are designed for an allowable unit working stress of 35,000 psi, which is about twice that normally used.

One of the bridges is in Test Loop C (ENR June 19, p. 54); girders are 18 in. WF 55 lb. It failed after about 100 applications of 40,000 lb tandem-axle truck loadings. The others are in Test Loop D; 18 in. WF 60 lb steel is used with 6½ x ⅜ in. cover plates. They failed after about 100 applications of 48,000 lb tandem-axle truck loadings.

Just how many load applications were expected, the designers can not say now. A conference of all interested officials is being held and a report will be issued after a thorough analysis of the situation.

The bridges, which are at ground level, were immediately shored up and will remain in operation for the two years of testing.

• **Truck overturns**—Also at the test track—this time on Loop B—a tractor and its 32,000 lb tandem trailer overturned as its Army driver was negotiating a left turn at one of the crossovers. The accident happened on opening day, October 15, after the test vehicle had put in about one hour of actual travel time.

No one was hurt, but all test traffic was stopped pending complete investigation.

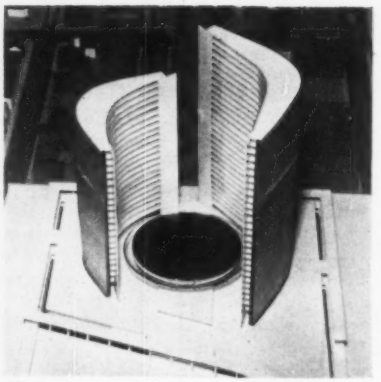
Lake Bed Asbestos Mine Opens

What's left of a 500 acre lake in Quebec is now just a big puddle next to a new 100,000-ton-a-year asbestos mining operation.

To get an estimated 47 million tons of asbestos ore, it was necessary to drain Black Lake and divert its source, the Becancour River (ENR Aug. 1, 1957, p. 49). After drainage, 37 million cu yd of overburden had to be removed from the two-mile long and half-mile wide lake bed.

The development also includes a $9 million 14 story building for processing the asbestos.

Lake Asbestos of Quebec, Ltd., a subsidiary of American Smelting and Refining Co., owns the installation.



Oyster Wins Competition For Toronto City Hall

Toronto will get an oyster-shaped city hall. The unusual design, by Viljo Revell, a Finnish architect, was selected in an international competition. The structure is expected to cost a minimum of $18 million and may run as high as $30 million.

Two crescent-shaped towers, 31 and 25 stories high, will rise out of a massive, three-story base covering about five acres. The towers will partly enclose the main public hall—a round room with a circular rotunda rising upward three stories to a glass dome above. All tower windows will face inward; the outside walls, of reinforced concrete, will be windowless.

The base section of the structure will provide almost half the office area. The ground floor will have hundreds of yards of counter space for issuing licenses and collecting taxes and fines. A mezzanine will be above the main floor. Governmental sections are planned for the third floor.

The winning architect flew to Toronto to receive his $25,000 prize and to confer with civic officials on the project. He is expected to start preliminary working drawings within a few months. Under the terms of the contest the city is committed to start construction within three years. A start is expected in late 1959.

State Says Sign Rebate Won't Pay Added Costs

Wyoming will not regulate billboards along its interstate roads. Gov. Milward L. Simpson gives these three reasons why:

• The additional ½ of 1% of construction costs given by the federal government to states restricting billboards will not compensate the cost of the added right-of-way needed.

• Wyoming is not troubled by the same billboard problems that confront more densely populated states.

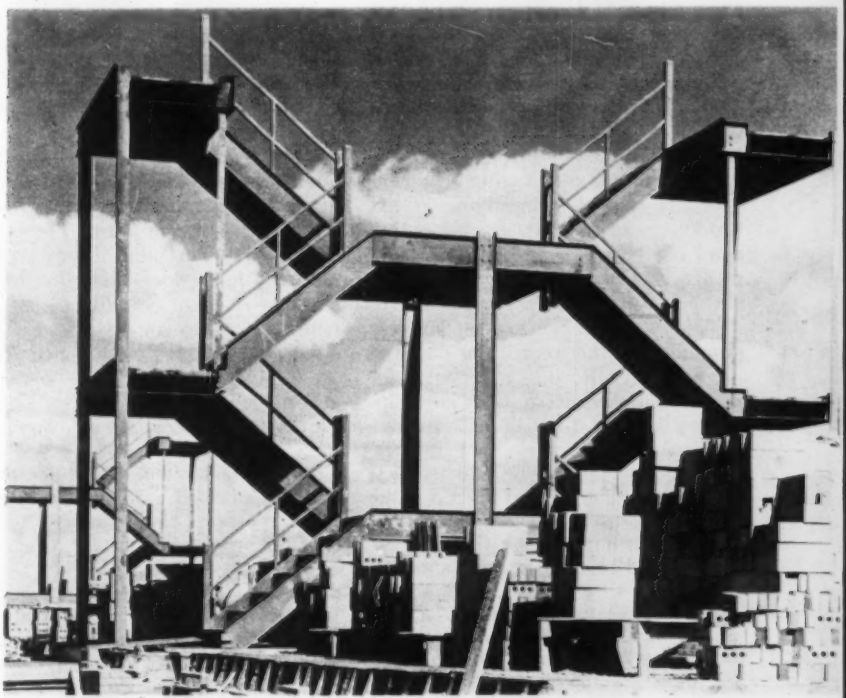
• Wyoming needs advertising signs to "promote and protect" its businesses.

San Diego Shipway Starts With Big Concrete Pour

The largest shipway ever built in San Diego was started last week with a 2,200 cu yd concrete pour. When completed, the National Steel & Shipbuilding Co. facility will be used to build ships weighing up to 12,000 tons. This first portion of the 80 x 500 ft way is a 300 ft long reinforced concrete slab, one foot thick with integral beams and girders, cast monolithically on 95% compacted fill. Another section, 200 ft long, will consist of prestressed concrete slabs on concrete piles.

First Stairs, Then Buildings

A three-level housing project in Kansas City, Mo., started from the inside out. The $2 million project of 140 units in 20 buildings has masonry load-bearing wall construction. The architect and contractor decided the easiest way to erect the steel stairs would be to put them up first and build around them. Glen E. Eidsen is the architect. J. E. Dunn Construction Co. is the contractor.



It's the Woman's Prerogative . . .

In 1956, she wanted house planning integrated with outdoor living . . . doorways with access to patio and garden . . . big windows with a full view.

In 1957, she emphasized the need for a family or activity room at the rear of the house, opening onto the outdoor living area . . . more spaciousness with an open living room, dining room and even kitchen.

Here's the House She Wants Now

Women want a more formal home. They want a full dining room, a full living room and, if possible, a family room off the kitchen.

That's what 80 women from 32 states told the housing industry last week. The girls were gathered by the National Association of Home Builders and 10 industry co-sponsors who assembled them at the 1958 Women's Conference on Housing in Washington, D. C.

One lady summed up the majority feeling this way: "We need a separate dining room—if for nothing else than to teach the children table manners. And we just couldn't get along without a full-size living room. It's the only place where we can talk and entertain in peace."

The conference thus put the homebuilding industry on notice that women may have had just about enough of open planning and perhaps too much of its attendant "togetherness."

Now they want more privacy.

Two years ago at the first conference—then government-sponsored—emphasis was on efficient layout of space integrated with outdoor living. Last year's industry-sponsored gathering registered a preference for open planning of living-dining areas. But a straw-in-the-wind last year was the desire for basements, as a place to get away from it all.

This year's conference broke new ground when the women got down to practical details on structural and mechanical features. The girls appraised building materials and construction, plumbing systems and fixtures, heating, air conditioning and utilities.

They also showed great interest in the mechanical backbone of the houses they own or hope to buy. Industry experts helped brief them on the technical details.

Here is what the women wanted—and why.

Durability in materials for outside the house run a close second to appearance, in the women's consideration. Many of them are keenly aware of such values as insulation and fire resistance in their new homes.

They object to an exterior combining three or four materials or colors, preferring no more than two. All of them would like to have an exterior finish that would last for 20 years—if they could get it.

Women don't like flat roofs. Their first choice is a gable roof of low or medium pitch. Although they need more information on the physical properties of various types of roofing, they now lean toward asphalt roofs in light colors.

They want windows of only two types: double hung and horizontal sliding. They want front doors to add a dramatic touch to the house. The women think today's entrys are commonplace.

Women like the feel of wood floors in preference to rigid construction. They want better soundproofing for privacy. Wood or brick walls are good for accenting, but other walls should be smooth.

They stress uniform heat with humidity control. They want extra thermostats for room or zone control. Big complaints: noise and dirt. They favor hot water systems and show a continuing trend to gas fuel and a growing interest in electricity. And they are certainly interested in radiant heating, although they don't know much about it.

Regional differences showed up in the ladies' preferences in types and styles of houses.

Most popular types were one-story, one and one-half story and split-level, in that order. The Northeast group, however, voted heavily for the split-level.

On architectural style, the ladies divided their votes evenly between colonial, traditional, contemporary and ranch styles. Ranch homes were first choice in the West.

New Powers?

Mortgage credit control urged for Federal Reserve

New backing for direct controls over mortgage credit showed up in Washington last week in a highly touted report made for the Senate Banking and Currency Committee.

The recommendation was part of a study of Federal Reserve Board policy done for Sen. J. William Fulbright's committee by Asher Achinstein, an economist on the staff of the Legislative Reference Service, a research arm of Congress.

The report provides ammunition for those who have been critical of the board, mainly the Democrats. It also will be used by those who favor giving the Federal Reserve Board direct controls to keep the economy stable. Included would be such things as authority to fix down-payments on homes and terms of mortgages.

Mr. Achinstein said there were three periods when the Federal Reserve Board made mistakes in setting monetary policy for the benefit of business stability and growth. They were:

- **In the 1953 tight money period,** Mr. Achinstein believes the board could have done a better job of forecasting the recession.
- **As the boom got under way in 1955,** the report says, the Reserve Board did not switch quickly enough to a tight money policy.

The report finds among the chief beneficiaries of actions to ease credit during the 1953-54 period were the construction industry—especially housing, commercial and public works construction—and the stock market.

Mr. Achinstein says the record of the open market operations of the Fed at the beginning of March 1955 shows it was concerned that "relaxation of terms for the rapidly expanding volume of consumer and mortgage credit represented a potential threat to stability."

"It was therefore surprising," the report says, "even in financial circles, that the Reserve Banks waited until mid-April and early May to raise the discount rate."

During the last half of 1957, Mr. Achinstein says, the continuation of the tight money policy contributed to the "sharpest business decline in the post war period."

Mr. Achinstein believes the effectiveness of Fed policy has been reduced in recent years by the growth of life insurance companies, savings and loan associations, investment companies, and pension funds. So, Mr. Achinstein says, some experts argue for selective control over housing credit as well as installment credit.

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Canada Slows Entry of U.S. Engineers

Canada is closing down on the entry of U. S. engineers. Reason: Some U. S. engineers have been displacing Canadians from their jobs.

The Canadian move isn't a new policy; it involves more rigid use of procedures and policies already available.

ENR asked the Domininon Department of Citizenship and Immigration for a statement on these policies. The following outline was provided by W. R. Baskerville, Director of Immigration who points out, "Canada maintains the right to determine who will be admitted to the country."

Except for citizens and residents of Canada, all applicants for admission are dealt with as immigrants or non-immigrants.

An immigrant—a person admitted for permanent residence—may practice his trade or profession. But non-immigrants—persons granted temporary entry—may work only at those jobs for which qualified Canadians are not readily available.

Engineers may now find it difficult to work in Canada as non-immigrants; there are few shortages of Canadian engineering personnel.

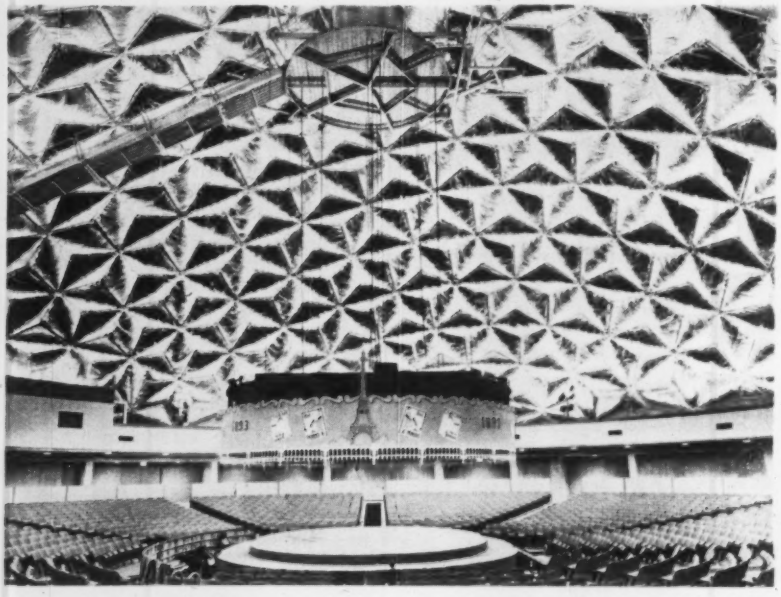
U. S. citizens entering Canada for temporary employment should follow this procedure:

If you are a technical or business consultant, or other expert assisting in Canadian operations, carry a copy of a letter from Canada requesting your services. You should also have a letter to the Immigration Officer-in-Charge from a responsible officer of the U. S. firm involved. This letter should include your name, date of birth and citizenship; your approximate length of stay; a statement of your qualifications; a request that you be allowed to enter Canada; an assurance that you will get the written endorsement of an Immigration Officer before serving any other Canadian client; and the name of the Canadian organization you will be working for.

In the case of other workers, the Canadian employer must apply at an Immigration Office and give particulars about the work to be done and the type of workers needed. His request will be approved only if qualified Canadian workers are not available to do the particular work.

After approving the request, the Immigration Officer will supply the employer with letters outlining the nature of the employment and the period for which entry will be granted. The employer should forward these letters to the worker for presentation at the port of entry.

While U. S. citizens are subject to a minimum of border formalities, they are normally questioned about the reason for their trip to Canada. Mr. Baskerville admits that this questioning is closer now than it had been. But, he says, non-immigrant workers do go through once it is established that their services are required.



Dome Lining Brightens Opera

An aluminized asbestos fabric forms the interior lining of the spherical dome enclosing the new Casa Mana Opera House, Fort Worth, Tex. The aluminum building, 62½ ft high and 145 ft in dia, seats 1,750 persons.

The lining is installed over 3 in. thick glass-fiber insulation. It covers piping, serves as a fire-resistant moisture barrier and reflects light and radiant heat.

Kaiser Aluminum and Chemical Co. designed and developed the building based on a system devised by R. Buckminster Fuller. George King, Fort Worth, was the architect.

Pedestrians Only

Peekskill plan calls for seven-block shopping mall

Peekskill, N. Y., is studying an urban redevelopment plan that includes closing off to vehicular traffic a seven-block area in the downtown business district. The section closed off would become a shopping mall for pedestrians only. The city's population is 18,287.

Waco, Tex., has been considering a similar idea as part of a long-range future plan (ENR Nov. 28, 1957, p. 84).

The Peekskill proposal covers 42 acres and is part of a master plan. Overall plan calls for a new highway system running the congested part of the city, expansive parking facilities near the shopping district, parks, playgrounds and a community center.

As drafted by Raymond & May Associates of White Plains, N. Y., the plan would preserve old business buildings, if possible. However, new arcades would be constructed in front of all of them. The shopping mall would be planted with trees, lawns and gardens.

The program would be carried out with urban redevelopment aid. Total federal and local government cost of the redevelopment is placed at $2.8 million, with the federal share coming to about $1.9 million.

Waco's shopping mall was proposed along with its redevelopment planning, but is not a part of the renewal program. It would come after the urban redevelopment phase. Voters already have approved a $12 million bond issue for streets, sewers, drainage, library and health buildings. The latter structures would be part of a proposed new civic center.

Contracts for urban renewal are expected to be let in about a year.

To Free the City

Philadelphia looks to new joint-fare plan to cut car travel into mid-town area

Observers from many other cities will be watching Philadelphia's new program to relieve mid-town traffic.

Plan is for the city to pay $160,000 in subsidies to the Pennsylvania and Reading Railroads. Philadelphia hopes to lure on to public transportation commuters and shoppers who normally drive in and clog mid-city streets. Incentive will be joint fares that, in some instances, are less than half what they are now.

First try will be on the Chestnut Hill to mid-town Philadelphia routes. The railroads will provide additional service and the Philadelphia Transportation Co. (trolleys and buses) also will cooperate.

Riders will be offered the bargain rate of a top railroad fare of 30 cents plus a 10 cent bus fare for those who use a bus to reach the railroad. Usual bus fare is 20 cents; railroad fare from some points along the line is as high as 70 cents. Under the old system, a trip into the city could run as high as 90 cents. Under the new plan it will cost no more than 40 cents.

On arrival in mid-town, commuters and shoppers may use PTC's shuttle buses to reach their final destination. This ride would cost an additional 10 cents.

Another aim of the program is to give mid-town business a lift in the face of inroads from suburban shopping centers.

Prefab Sections of Track Used in Rebuilding "El"

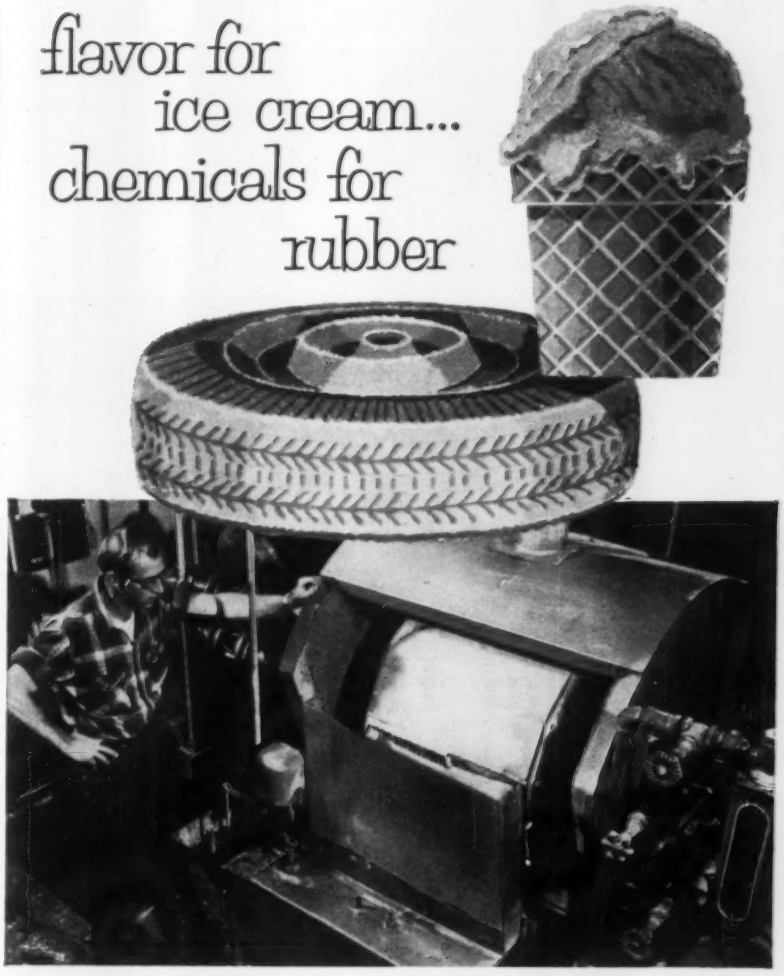
Lengths of prefabricated train tracks —33 ft long and complete down to the third rail—are hoisted and set in place by crane in rehabilitating sections of New York City's renovated train structures.

This new method of rebuilding is 25 to 30% cheaper than the old on-the-job-replacement system, says Charles L. Patterson, chairman of the city's Transit Authority. It also is faster and interferes less with passenger traffic.

Track, ties, plates, footwalks and third rail are put together at yards. The 4½ ton assembly is then carted to the job site on a flatbed truck. After an old section has been cut out and loaded onto another flatbed, the new section is put in place. Over 260 ft of track are being laid in this way on the IRT Pelham Bay Line.

Prefabricated sections of railroad were first used in the Soviet Union according to Mr. Patterson. There, railroad cranes carry the completed sections to railheads and lower them in place.

flavor for ice cream... chemicals for rubber



Now pulp mill spent sulphite liquor is put to work in a host of chemical products

Spent sulphite liquor, frequently a waste product and a disposal problem of the paper and pulp industry, is a rich source of valuable materials at the Marathon Division of American Can Company. From its lignin content comes a major part of the vanillin that gives Americans their favorite ice cream flavor, as well as a host of other chemical products with uses all the way from rubber processing to ceramic manufacture, dyeing and oil well drilling. Thanks to the chemical engineer, new opportunities have thus been found to make even greater use of lumber, one of our greatest natural resources.

A special 3-stage lime precipitation process, using several types of continuous rotary filters made by Dorr-Oliver, is the basis of the Marathon recovery process. One of the filters is shown above.

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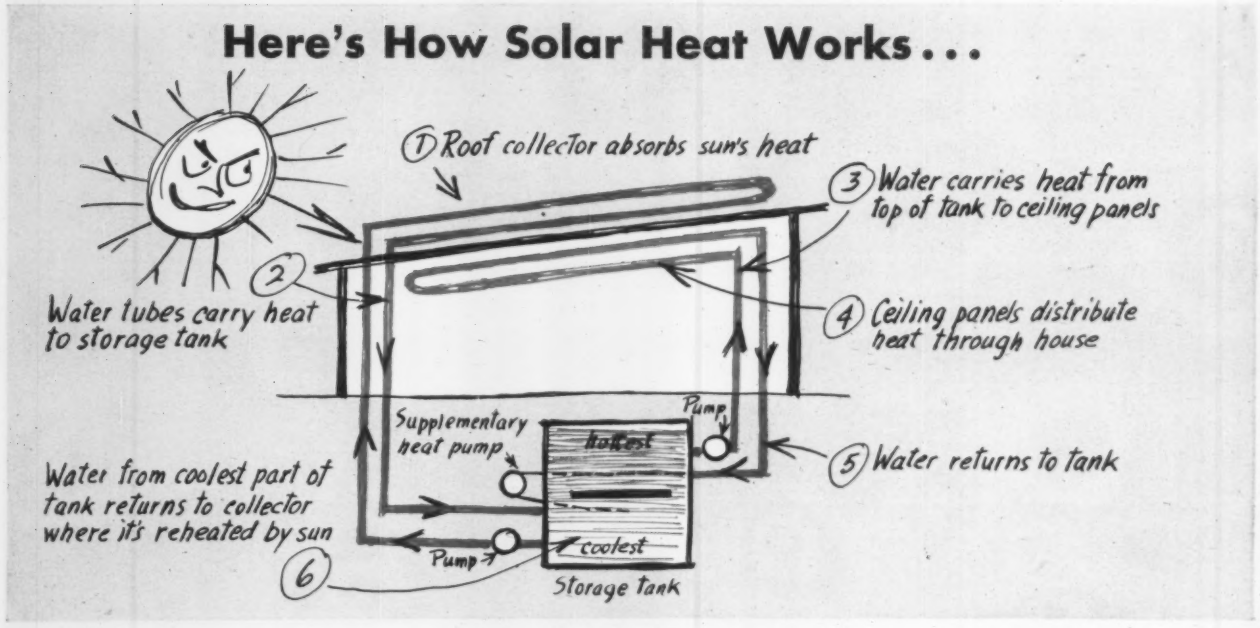

Here's How Solar Heat Works...
1 Roof collector absorbs sun's heat
2 Water tubes carry heat to storage tank
3 Water carries heat from top of tank to ceiling panels
4 Ceiling panels distribute heat through house
5 Water returns to tank
6 Water from coolest part of tank returns to collector where it's reheated by sun
Supplementary heat pump
Pump
hottest
coolest
Pump
Storage tank

Solar Heat: Research Is Bringing

Marianne Stern
Assistant Editor, Engineering News-Record

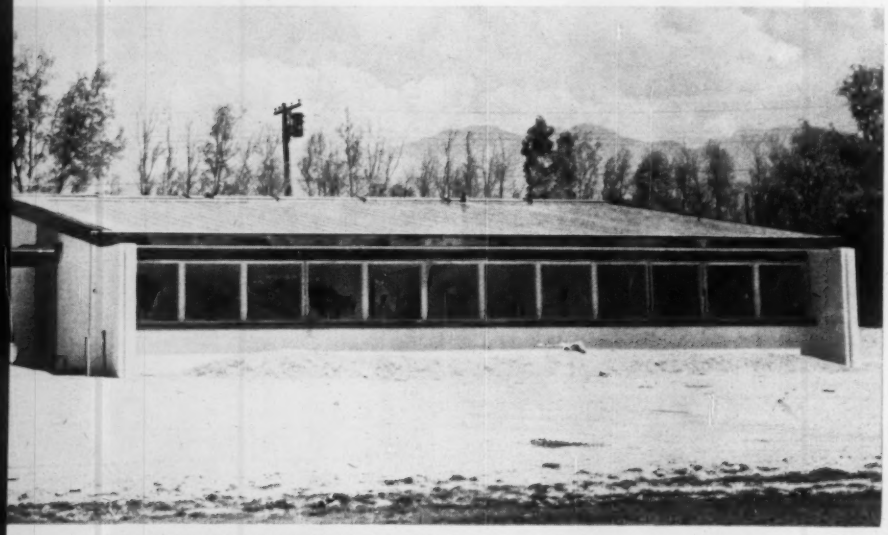
The newest solar heated and cooled building in the U. S. will be completed next month in Tucson, Ariz. It is a single-story building that will serve as a research center for the Institute of Atmospheric Physics, University of Arizona.

This is the fourth structure using solar energy as its primary heat source to be completed this year. It is further evidence of the growing volume of research to reduce cost and develop improvements that will make solar heating and cooling systems commercially practicable.

Solar units are gaining favor because they are particularly well suited to home "comfortizing"; they are exceptionally clean and safe to operate. And the continuing rise in the prices for conventional fuels is providing an economic incentive for heating by sunshine.

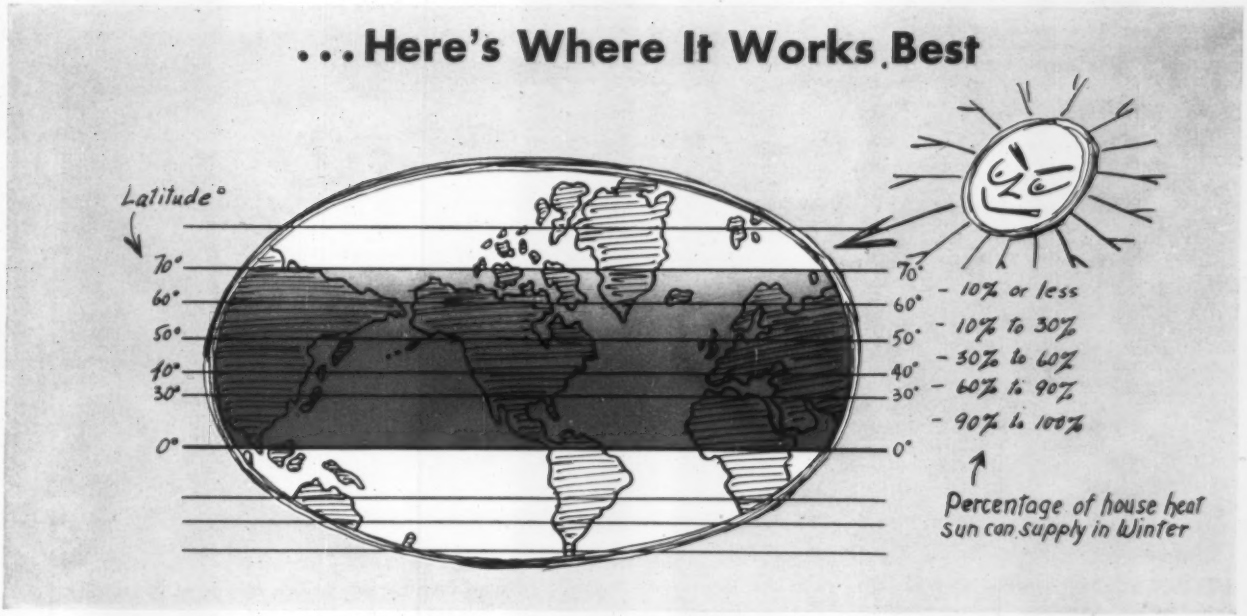
The Tucson building absorbs the sun's heat through a copper collector with built-in tubing; this collector also functions as the pitched roof of the structure. Water circulating through the tubes transports the heat to a storage tank and then to interior-ceiling panels that give off heat in the house. (see diagram.)

• **How it works**—A solar heating system



NEWEST SOLAR BUILDING in Tucson, Ariz. will serve as a research center. The structure cost $23,000, including the heating and cooling system.

FIRST SOLAR OFFICE BUILDING successfully completed its second heating season



It Closer to Home

has three basic parts—collector, storage area and circulation system.

A flat plate tilted toward the sun collects the sun's rays; the absorbed heat is then transferred to tubes attached to—or an integral part of—the collector. The area under the collector is generally insulated to prevent energy loss through the back plate.

Water or air flowing through the tubes carries heat to a storage tank. There it is stored, providing a reserve, for use at night or on cloudy days. Gravel or water is the commonly used storage medium.

The house-heating system is fed from the top of this tank. Heat is generally circulated through the house by warm air in ducts or hot water in pipes. After giving up heat to the house, the water, or air, returns to the storage unit. It is then circulated from the bottom of the insulated storage tank, back to the collector, and the cycle repeats itself.

When the temperature of the collector gets too low (because of insufficient sunlight) the fluid flow from collector to storage area is cut off so the storage area will not be cooled.

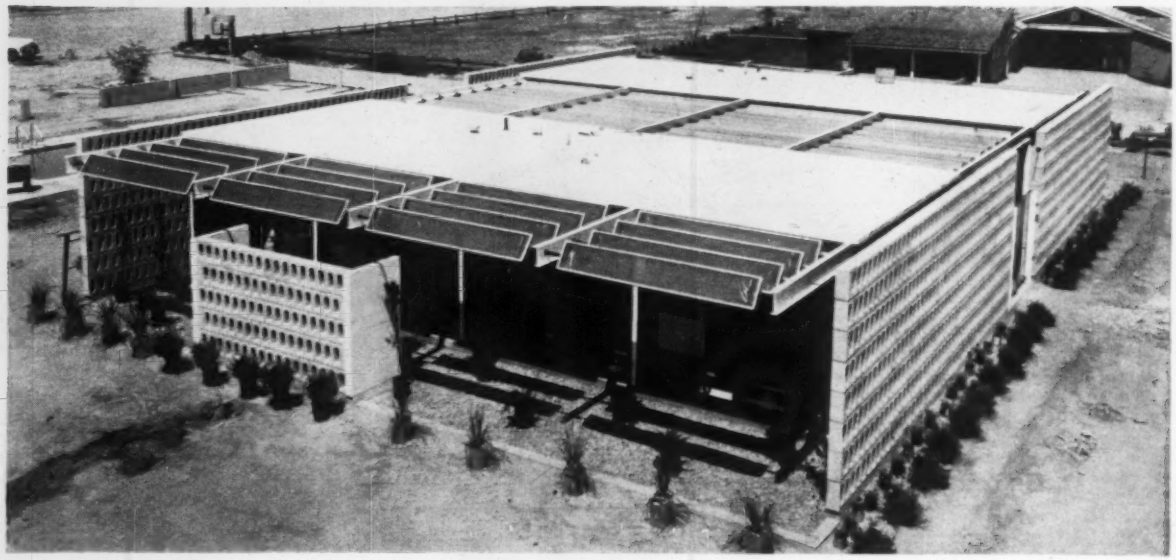
For summer cooling the system operates much the same way, except that relative position of the tank feeds are reversed. In summer, the collector operates nightly to reject heat from the top of the storage tank and the panels draw cooled water from the bottom of the tank, thereby keeping a comfortable temperature inside the building.

• **Getting extra heat**—In most areas of

in Albuquerque, N. M. More than 90% of its heat was obtained from the sun.

COLD-WEATHER SOLAR HOUSE is located in Lexington, Mass. The two-story, three-bedroom home was designed to meet living requirements in a northern climate.

. . . Cost of heating the Phoenix house is estimated at $450 a year



LUXURY SOLAR HOME at Phoenix, Ariz., completed this year cost $50,000. Heat for the house, including its domestic water supply, is obtained from the sun through an array of louver-collectors supported between the steel beams over the patios and court.

the U. S. it's not practical to use solar energy for all the heating requirements of a house. (Exceptions are regions where central heating is not necessary and the weather is warm most of the year.) The optimum ratio for supplying heat to a house appears to be about 75% from solar resources and the rest from an auxiliary heat system. The additional cost of a collector large enough to heat a house entirely is not usually justified. An auxiliary heater avoids the need for an excessively large solar-heat storage area.

The most desirable combination is believed to be a solar system and heat pump, as is used at Tucson. When the temperature in the storage area drops below a desired level, the auxiliary heat pump automatically switches on. The pump will operate to raise the temperature at the top of the tank and lower the temperature at the bottom. The cooler water is pumped up to the collector where it is heated. The collector then returns hot water to the tank. (The colder the heat pump makes the bottom of the tank, the higher the collector efficiency becomes.) When the cold spell passes, the collector brings the entire tank back up to the desired temperature, and the heat pump shuts off.

During very hot summer periods the heat pump will also function in this manner—raising the temperature at the top of the tank and lowering it at the bottom. In this case the result is better heat injection efficiency.

• **Other solar structures**—Solar houses have been around since 1939. But as yet no one method has been found best for incorporating the heating system into the structure. A number of different ways have been tried.

A $50,000 house in Phoenix, Ariz., built by the Association for Applied Solar Energy and completed early this year, is equipped with solar energy for space heating, domestic hot water and warming a swimming pool.

The house is built in two sections separated by a central court and connected by a glass enclosed walkway. Free-standing concrete masonry screen walls along the east and west sides of the house keep the sun off the building walls. Heat is collected by movable louvers, supported between steel beams over the patios and central court. The louvers adjust automatically to face the sun during the day and turn face down into the court at night; they also serve to shade the court.

Heat is circulated through the house by fans in the indoor units of two heat pumps. Heat pumps also provide auxiliary heat when needed.

Another house opened this year is Massachusetts Institute of Technology's solar house IV, Lexington, Mass. The two-story, three-bedroom frame gets 75 to 80% of its heat from solar energy; a small oil furnace provides the rest. Its collector of aluminum and glass forms the roof and wall of the building's south side.

And a solar laboratory and a sun court have been constructed at Princeton, N. J. The court includes a solar heated house, solar stills, and solar cooking equipment. The project is a joint effort of Curtiss-Wright Corp. and New York University.

The first solar-heated office building, built in 1956 for the consulting firm of Bridges & Paxton, Albuquerque, N. M., has successfully completed its second heating season. It obtains more than 90% of its heat from the sun. The building's 750 sq ft collector is supported on a wood framework on the south side, and is inclined at an angle of 30 deg from vertical. The storage area is a 6,000 gal underground water tank.

• **Comparative costs**—The Tucson Research house cost $16,000 to build, and the heating and cooling system ran another $7,000. A comparable conventional system would cost about $2,500. However, the operating cost with solar energy is expected to be less than $150 per year—about half that of a conventional gas heating system and refrigeration unit—according to Raymond W. Bliss, Jr., associated physicist, Institute of Atmospheric Physics.

It is estimated that the Tucson solar house could be duplicated commercially in the $16,000 to $18,000 class. (The research station contains special equipment for solar instrumentation and study, which increased its building cost.)

The cost of heating and cooling the Phoenix house (almost 2,000 sq ft) is estimated at $450 a year compared with $1,000 annually for conventional heating-cooling equipment. But the solar equipment cost $4,000 more to install than conventional equipment.

The solar office building during the 1956-57 winter recorded a 53% saving in fuel costs. Cost of installing plumbing, heating and air conditioning in the building was $17,400 or $4.05 per sq ft.

"Only moderate improvement is

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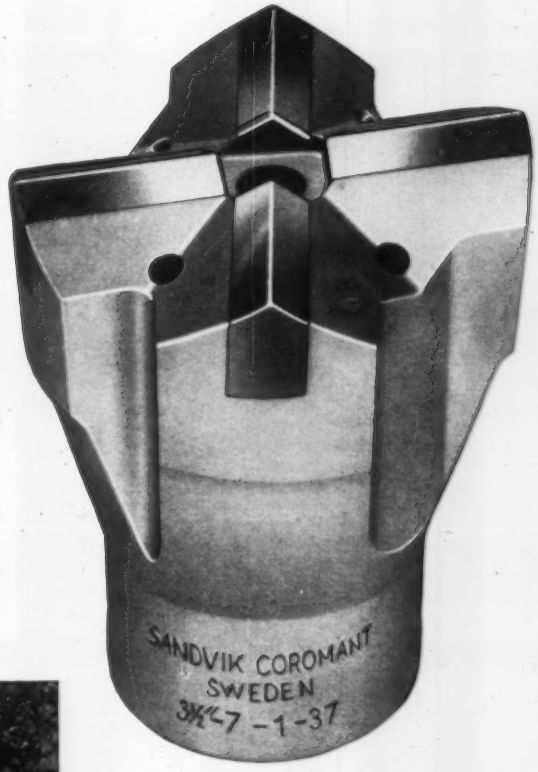
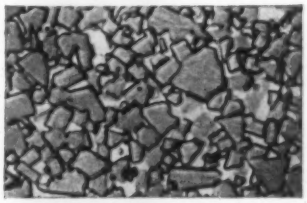
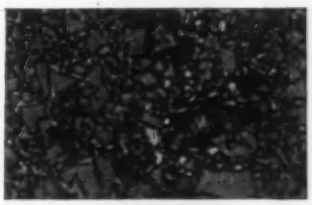




Sandvik Coromant Tungsten Carbide (Microphoto) Uniformity of size, even distribution of grain are marked. Free from porosity and impurities —therefore stronger, longer-lived.



Low quality Tungsten Carbide (Microphoto) Black marks are contaminations caused by deficient production control. They weaken the carbide, reduce its working life.

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SHOULDER	F	x	x														
	113	x															
	H		x	x	x	x											
	115		x	x													
	D					x	x	x	x	x	x	x	x				
	K												x	x	x	x	
BOTTOMING	1" Rope			x	x	x											
	200			x	x	x											
	1¼" Rope					x	x	x	x		x		x				
	400						x		x		x						
	1½" Rope										x	x	x	x	x		
	600										x	x	x	x			
	700												x	x			
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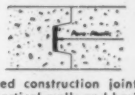
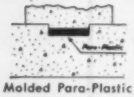


Keyed construction joints in vertical walls and horizontal slabs.



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. . . Solar heat

needed to make solar systems economically competitive with fuels currently used for moderate temperature heating," says Mr. Bliss. "At present the combined operating and amortizing cost of a sunshine-fueled heating system is not more than about twice the combined operating and amortizing cost of a conventional fuel-burning system.

"This present cost situation is roughly true throughout much of the U. S.—excluding some particularly cloudy and unfavorable areas for solar house heating located in the Pacific Northwest and around the Great Lakes region," he reports.

• **The potential**—Three major deterrents now handicap wide-spread use of solar heating: competitive fuels, architectural problems, and cost.

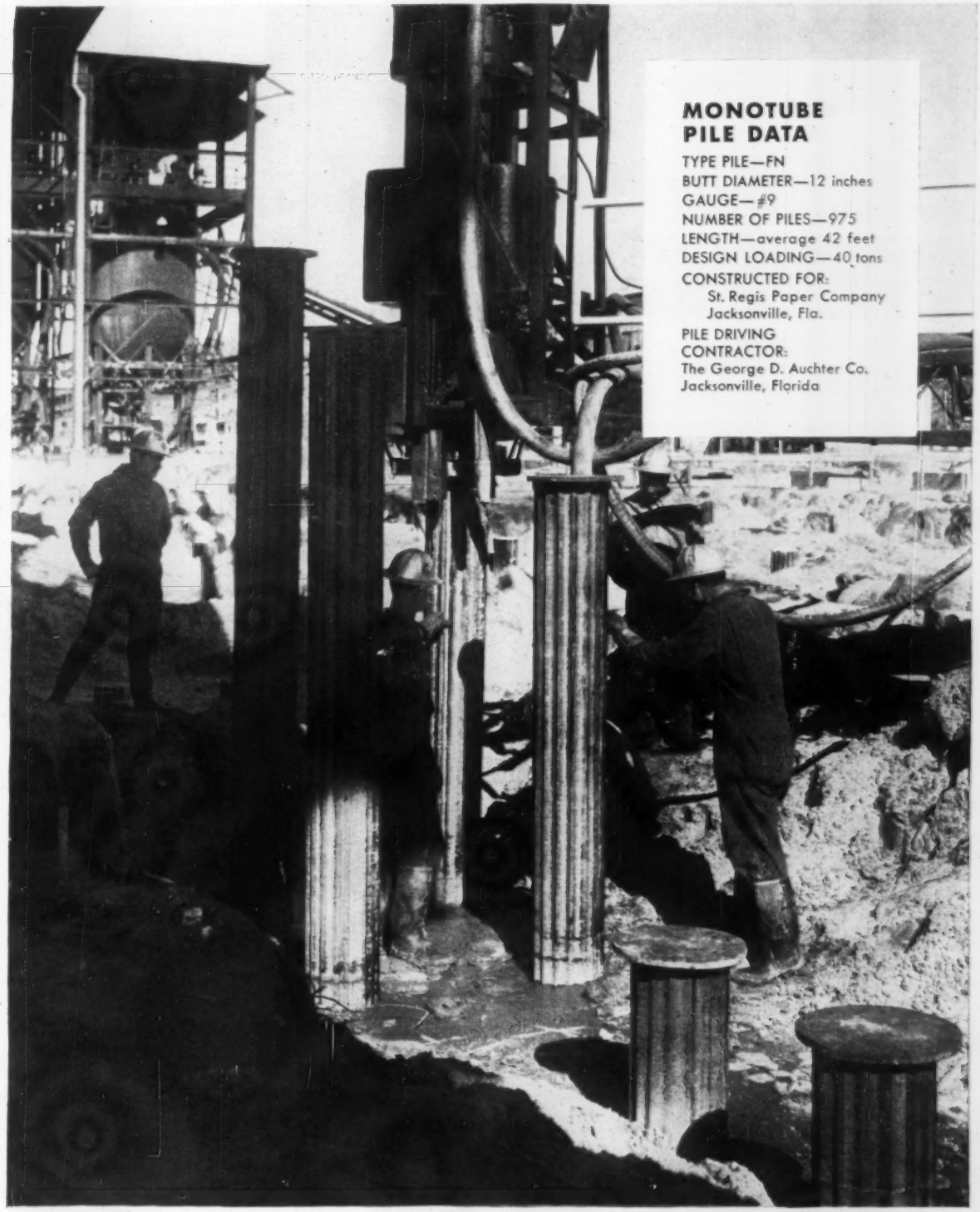
Competitive fuels are relatively low-cost today. Solar heat enthusiasts, however, are anticipating a change. Projected increases in population and energy requirements indicate that non-renewable fuel reserves will not be adequate in the future. Eventually, dwindling supplies are expected to drive prices up. If this happens, solar energy will gain a distinct competitive advantage.

A major architectural problem is still presented by the collector. Because solar energy is so diffuse, the collector area must comprise a relatively large part of the exposed surface of the building it serves. Yet its design is confined within relatively narrow limits. The collector will probably have to be located on the portions of roof and walls facing south. The amount of tilt will depend chiefly on the latitude modified to some degree by cost and appearance.

Taking these factors into account, the solar heated house is likely to be different from currently fashionable suburban homes. The new appearance is the challenge faced by architects and engineers.

Initial capital equipment costs are still prohibitive, but improvements in design and construction methods are being effected. Some recent developments improving the collector include: processes for roll-bonding copper and aluminum plates so that collector and tubes are integrated—eliminating the need for attaching separate transfer tubes; surface treatments for copper and aluminum that increase their capacity for absorption and decrease that for heat loss; and a plastic film to replace the fragile glass cover used over some collectors to keep heat from escaping into the atmosphere.

If original costs can be cut in half, the market for solar heated houses may rapidly expand to include most of the U. S.



MONOTUBE PILE DATA

TYPE PILE—FN
BUTT DIAMETER—12 inches
GAUGE—#9
NUMBER OF PILES—975
LENGTH—average 42 feet
DESIGN LOADING—40 tons
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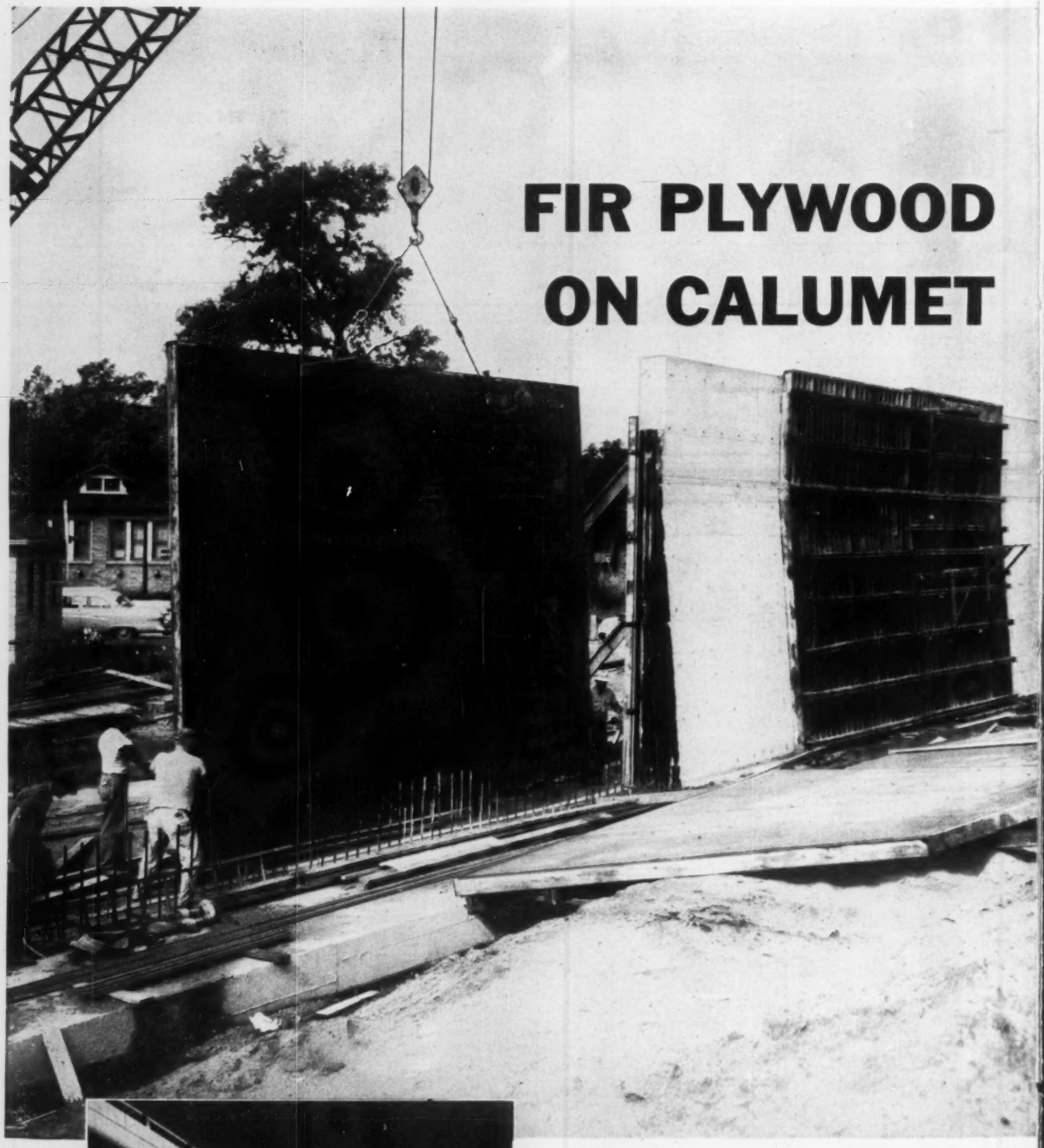
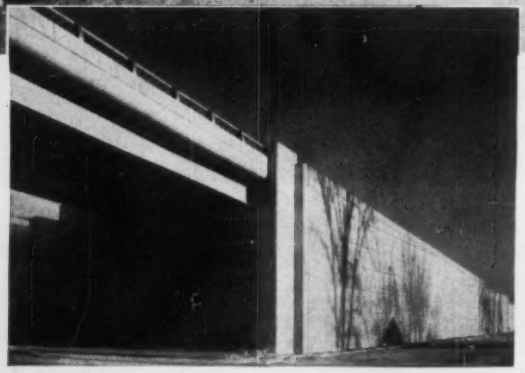
FIR PLYWOOD ON CALUMET





Big prefabricated fir plywood form sections helped cut costs, speed work on 8-mile long Calumet Skyway.

CALUMET SKYWAY TOLL BRIDGE LOCATION:
West end of Indiana Toll Road to downtown Chicago

COORDINATING ENGINEERS:
De Leuw Cather & Company

CONTRACTORS FOR FORMWORK:
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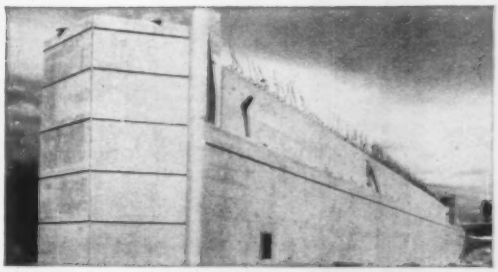
FORMS SPEED CONCRETING SKYWAY TOLL BRIDGE

GIANT FIR PLYWOOD FORM SECTIONS, as large as 28' x 31', played an important role in keeping work moving at a near record clip on the new eight-mile long Calumet Skyway which links the Chicago business district with the Indiana toll road.

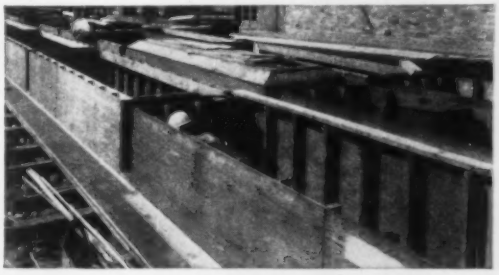
The job features one of the world's longest retaining walls along three of the eight miles. Over 30 feet tall in places, the wall was formed by leap-frogging the big prefabricated plywood form sections. In most instances, forms were built to maximum wall height and simply cut down for shorter walls. Plywood forms were also used for abutments at street crossings and for beams and bridge decks on overpasses.

Plywood was called for in the job specifications for uniformly smooth concrete, but contractors on the job credit plywood's ease of fabrication and handling—coupled with a high number of re-uses (up to 15 or 20 pours)—with holding down costs as well.

All told, over 300,000 square feet of plywood forms were used by the five contractors concerned with pouring walls, abutments and decks.



Rustication lines on walls and abutments were achieved by nailing strips to face of plywood forms.



Fir plywood was also used for forming reinforced concrete beams and deck slabs on entrance ramps.

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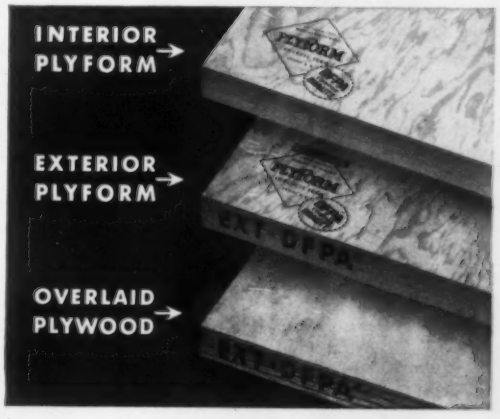

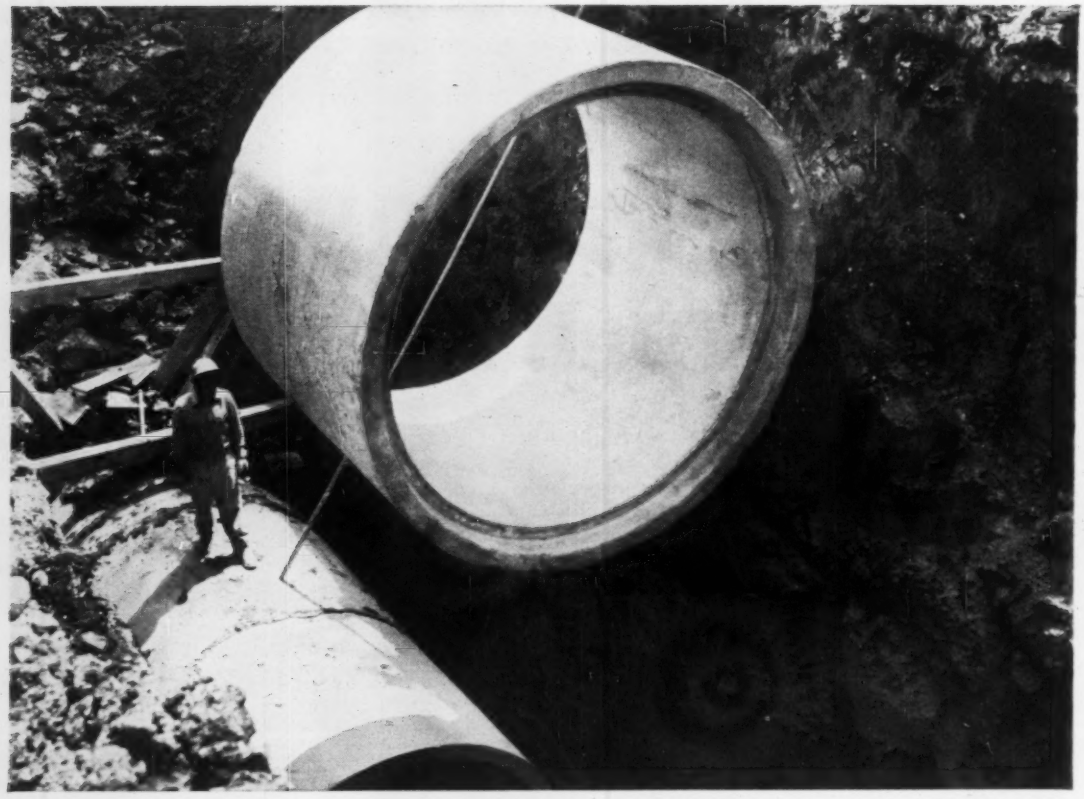

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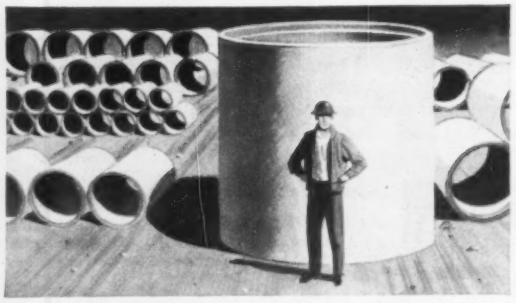

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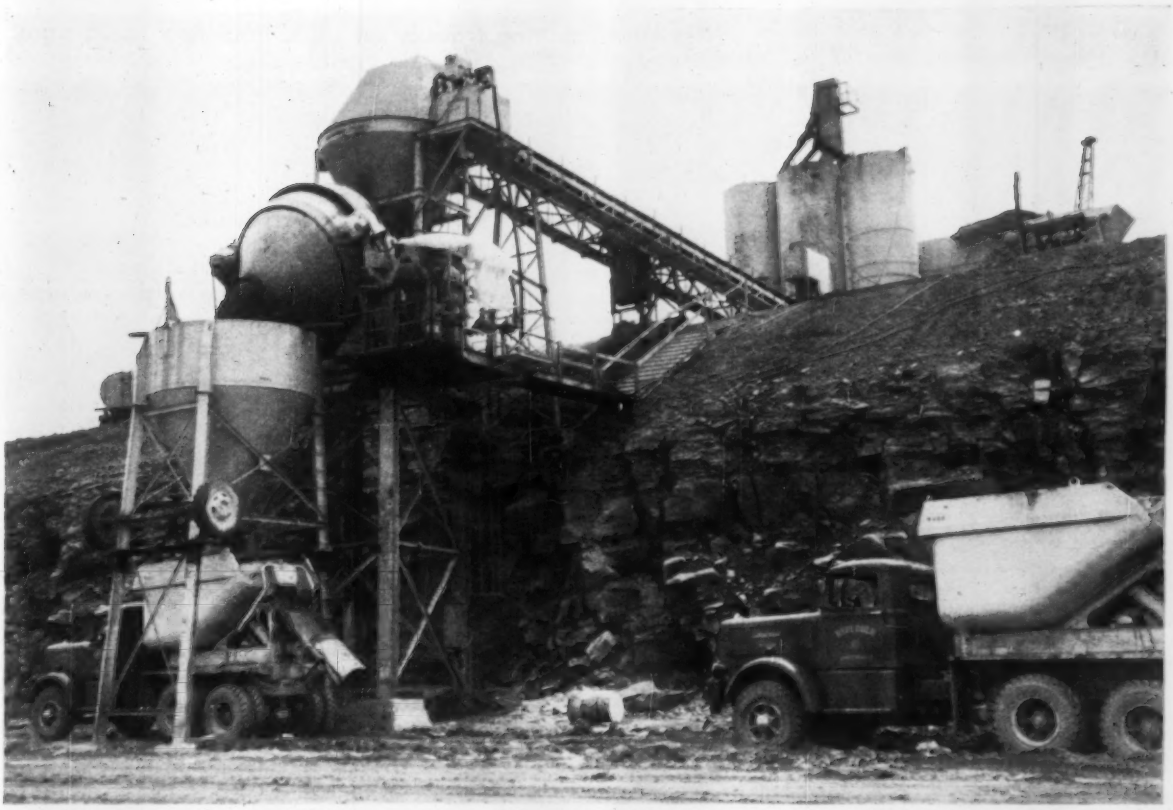

Concrete plant erected at hillside uses topography to simplify loading of 8 cu yd mixer.

Paving stringout is headed by new type bucket spreader and served by non-agitating trucks.

Big Mixer Paces Paving Job

A king-size concrete mixer, non-agitating trucks and an unusual spreader proved a winning combination this summer on a highway paving job near Mansfield, Ohio. C. F. Replogle Co. was the contractor on the five miles of four-lane divided pavement.

Other factors contributing to job-efficiency included over-all balancing of the five basic steps—materials handling, concrete mixing, hauling, spreading and finishing—in constructing the twin 24 ft roadway pavements.

• **King-size mixer**—The concrete mixer boasted an 8 cu yd capacity, which is two to four times that normally found in concrete plants. Replogle tailored all other operations to the production capacity of his giant mixer.

This meant special measures had to be taken to insure ample supplies, efficient handling, and continuous batching of concrete materials to feed the hungry mixer. At top output of 200 cu yd per hour, the machine takes in 300 bbl of cement, 220 tons of gravel, 110 tons of sand and 4,800 gal of water per hour.

• **Concrete batching plant**—Midway of the five mile project the new highway lies in a deep cut with a 35 ft bluff on

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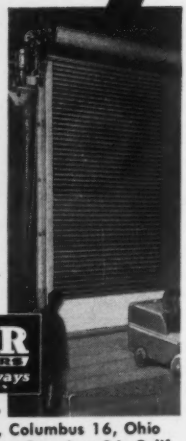
Kinnear Rolling Doors



Heavy galvanizing—*1.25 ounces of pure zinc per sq. ft. of metal, by ASTM standards*—gives Kinnear Steel Rolling Doors many extra years of carefree service life. And Kinnear's **special Paint Bond** prepares the zinc surfaces for quick, thorough, lasting paint adhesion. Insist on Kinnear Doors.

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Saving Ways in Doorways

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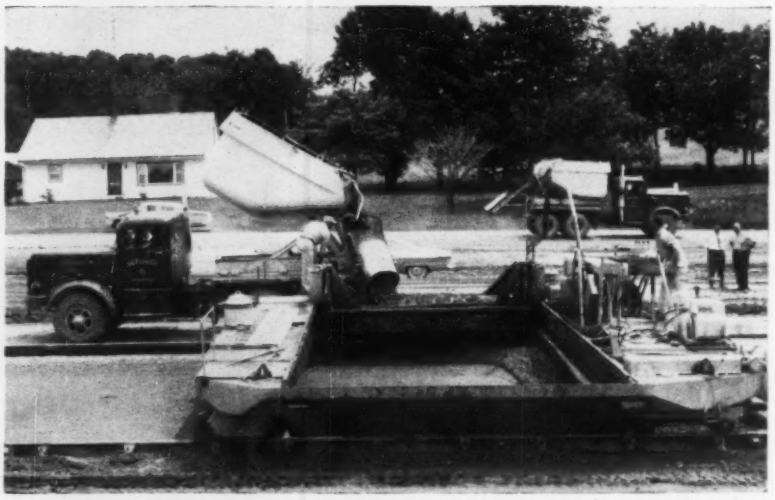
. . . High-speed paving train is set up to maintain rapid pace



BUCKET SPREADER places and levels bottom 5 in. of 24 ft roadway on granular subbase.

one side. Replogle took advantage of this topography in laying out his concreat batching and mixing plants.

He set up the batching plant atop the bluff about 150 ft back from the face, erected three 800 bbl cement silos and established sand and gravel stockpile areas nearby. The plant's sand and aggregate bins were charged by a crawler crane with a 1½ yd clamshell bucket, assisted by a truck crane with a 1 yd clamshell.

A 36 in. wide, 155 ft endless belt conveyor transported the dry batches of sand, gravel and cement from batching plant to the big tilting mixer, located just below the top of the bluff. Although the conveyor was on a slight positive grade, concrete materials flowed by gravity from batching plant atop the bluff through the mixer to the concrete trucks operating at the foot of the bluff. A 12,500 gal water tank at the top of the bluff supplied water to the mixer, by gravity.

Normally, it would have been necessary to erect the endless belt conveyor on a rather steep grade to charge the mixer at that height. But in this case, the mouth of the mixer was at about the same elevation as the bottom of the batching plant's weighing hopper. The conveyor, therefore, could be erected on a relatively flat grade of about 3%

• **Concrete mixing plant**—The endless belt conveyor discharged automatically weighed batches of sand, cement, gravel and air entraining additive into a receiving hopper above the mixer. Mixed concrete was discharged into a 25 cu yd holding hopper and from there into the non-agitating trucks. The receiving hopper, water measuring device, and mixer were supported by a steel frame tower set on concrete foundations at the base of the rock bluff. A towing hitch and a single axle with pneumatic tired wheels made the holding hopper and its four-leg braced tower portable.

The mixer was designed for minimum tilting during a complete loading, mixing and discharging cycle. Concrete materials were introduced at the rear and mixed concrete discharged at the front.

During charging and mixing, the mixer revolved in a vertical plane, but the axis extending through the charging and discharging openings remained horizontal. Thus, the mixer and its 16 tons of concrete need only be tilted through an angle of about 45 deg below the horizontal to discharge.

• **Non-agitating trucks**—Concrete was hauled from the central mixing plant to the paving site in a fleet of non-agitating dump bodies mounted on conventional three-axle trucks. Each truck hauled about 6 cu yd of concrete—16 trucks were used when the length of haul approached a maximum of 2.5 miles. Generally, the loaded trucks used the shoulders of the completed subgrade; using local roads, in part, for the return trip to the concrete plant.

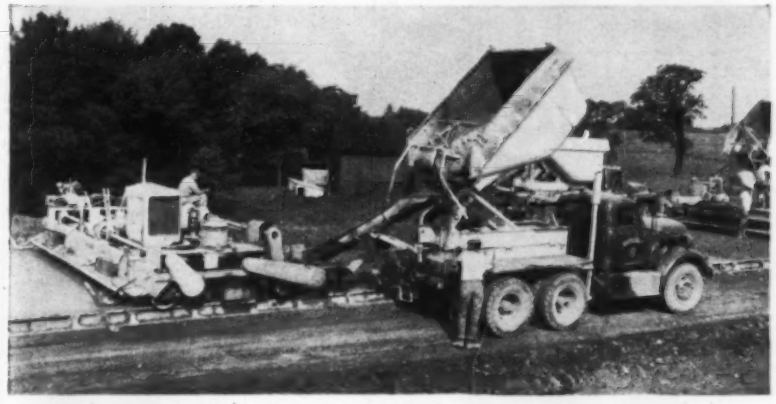
At full production, batching, mixing, hauling, placing and finishing the concrete were just about continuous operations for a single 10 hr shift per day.

The holding hopper, with its 25 cu yd capacity, was an important contributor to this continuous operation. It balanced out the variation between the capacities of the mixer and the dump trucks. It could hold three batches of concrete—enough to fill four dump trucks.

The amounts of concrete materials comprising a mixer of concrete were in

set by giant concrete mixer

WELDED WIRES reinforcing fabric is placed on base concrete ahead of finish coat spreader.



SCREW-TYPE SPREADER places top 4 in. of concrete over base concrete.

about the same proportions as those found on any contemporary highway paving job. But they were larger.

A typical 8 cu yd mix contained the following proportions: 12 bbl (4,512 lb) of cement; 10,430 lb of No. 3 stone; 6,950 lb of No. 4 stone; 192 gal of water; 8,900 lb of sand; and 12 ounces of air entraining additive.

• **Paving stringout**—Heading the stringout of paving and finishing equipment was a newly developed concrete spreader which spread the lower 5 in. of concrete on the compacted granular subbase.

The self-propelled spreader is hydraulically operated. As it moves forward on the road forms, its 12 ft long, 4 cu yd bucket spreads the concrete transversely, then strikes it off to the depth required for placing fabric.

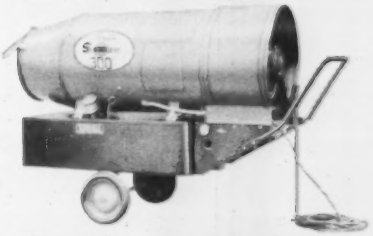
Immediately behind the reinforcing crews comes the second machine in the paving train—a screw type spreader. It spreads the upper layer of concrete and strikes it off to the specified 4 in. thickness.

The spreader is followed by a transverse finishing machine, a longitudinal finishing machine, a finishing bridge with burlap drag, and a concrete-curing spray machine. Transverse contraction joints were sawed at 60 ft intervals about eight hours after the concrete was finished. Longitudinal joints at the pavements' center line were sawed when the concrete was about 24 hours old.

The 24 ft wide pavements are located 64 ft c-c. Shoulders of stabilized crushed aggregate are surfaced with 3-in. of asphaltic concrete 8 ft wide along the outside of pavements and 4 ft wide along the inside.

Glen B. Durst was construction superintendent on the paving. His assistants were K. R. Hannan and Lee Singleton. Clarence Whalen was in charge of the concrete batching and mixing plants. William S. Hazeltine was project engineer for the Ohio Department of Highways.

COLDER WEATHER COMING!



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RAILINGS AND GRATING save 66 per cent of steel's weight, require less costly supporting structures and will never need painting or major repairs—because they're made of Alcoa Aluminum.

THE GREATER NEW ORLEANS BRIDGE covers 2.3 miles in approaches and main span, crossing the Mississippi River to link New Orleans proper with rapidly growing West Side communities. Fifty-two feet wide, it carries four lanes of traffic, eventually will accommodate 18,000,000 cars and trucks annually.

SPECIALLY DESIGNED LIGHTING STANDARDS of Alcoa Aluminum will withstand winds of hurricane force, never corrode or deteriorate inside or out. Six different types were designed for approaches and main span.

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Bridge components and structurals of Alcoa® Aluminum resist moisture, humidity and industrial fumes; they stay strong, attractive and easy to care for. Their lighter weight speeds construction, saves money and man power and equipment.

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Maintenance savings on bridge parts of Alcoa Aluminum make taxpayers' dollars go further, repay the public trust reposed in civic officials and their professional guides. Your nearest Alcoa sales office can advise you of our complete range of bridge accessories and structural parts. Or write: Aluminum Company of America, 1974-K Alcoa Building, Pittsburgh 19, Pennsylvania.

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Overhead Sign Structures and Signs: Pfaff and Kendall, Newark, New Jersey

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YOUR GUIDE TO THE BEST IN ALUMINUM VALUE

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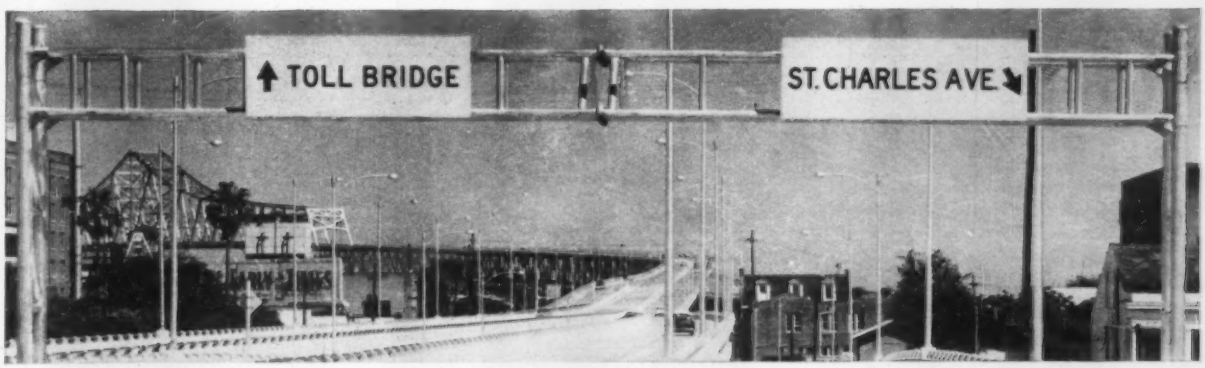


OVERHEAD SIGN STRUCTURES AND SIGNS of aluminum completely eliminate painting and maintenance problems that tie up traffic and create safety hazards. Light in weight and easy to install, they stand up to winds of 100 mph.

THREADED RODS through carts riding along trench-spanning beams, are retracted and extended by turning nut seated on cart top to raise and lower . . .

MASSIVE WOOD DUCT STRUCTURE made up of short lengths of creosoted

Small Steel Carts Lift, Shift and Lower

Anthony H. Loughran
Assistant Engineer
The Pacific Telephone & Telegraph Co.
San Diego, Calif.

Little steel carts played a big role when a massive, buried, wood duct structure carrying telephone cables was shifted and lowered to a new position in San Diego, Calif., recently. The utility relocation was carried out without damage—and without interrupting service to subscribers.

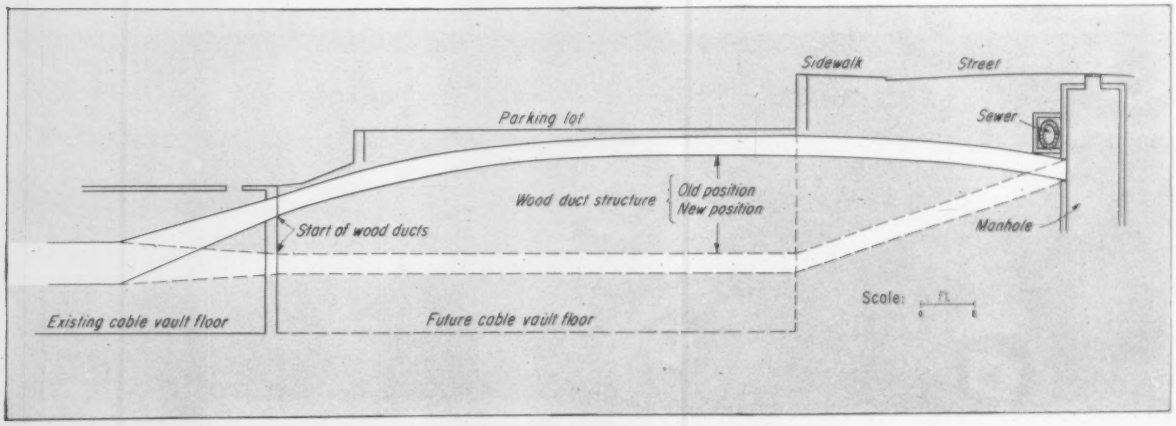
The structure—weighing 450 lb to the ft—took off from a basement cable vault and curved horizontally and vertically upward, passing beneath a parking lot and ending at a mid-street manhole 137 ft away.

The duct structure had to give way to a new Pacific Telephone & Telegraph office building scheduled to go up on the parking lot. Rather than lay new cables, company engineers decided it would be cheaper and quicker to move the existing structure.

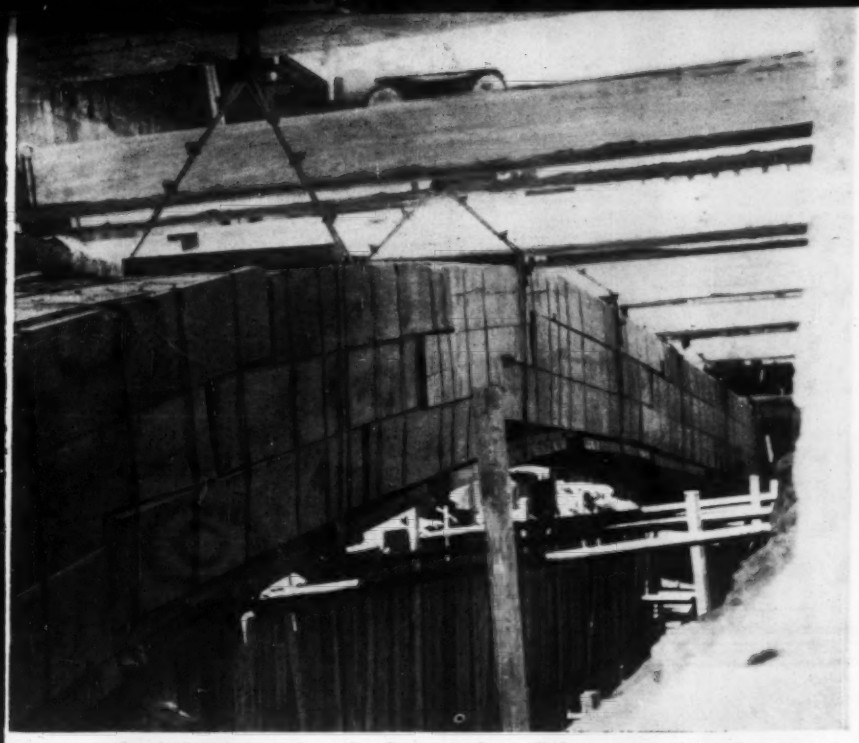
This meant digging it out, moving it about 9 ft sidways and dropping it from 5 to 18 ft along its length. The structure consisted of a cluster of 42 ducts made up of short lengths of creosoted wood, placed in 1925. Most of the cables running through the ducts are sheathed in lead and maintained under a gas (dehydrated air) pressure of about 9 psi. The cluster is 27 in. wide and 31 in. deep.

Contract for the delicate job went to Haas & Haynie Corp., San Francisco.

• **Setting it up**—First thing to do was to get at the duct structure.



A VERTICAL AND HORIZONTAL CURVE upward was taken by duct structure in old position as it passed underneath parking lot—site of a new building—out to a mid-street manhole, 137 ft. away.

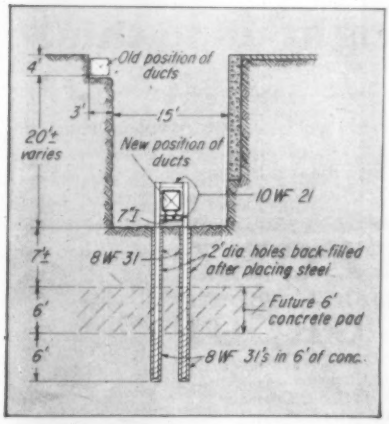


wood, which is being relocated. Carts are then rolled to center of trench, taking the duct with them as it hangs from cable slings connected to clevis pins attached to rod ends.

Cable Duct Structure

A 15 ft wide trench, averaging 21 ft deep, was dug all along one side of the duct structure. This left it on a 3 ft wide trench. There it was encased in 2 in. planking and banded with steel straps along its length for protection.

Next, structural steel frame supports, which would later receive the duct structure, were set in the bottom of the shored-up trench. These consisted of six pairs of H-beams. Their lower ends were anchored in 6 ft of concrete at the bottoms of 19 ft deep holes.



TRENCH WAS DUG along one side of ducts, which were shifted and lowered.

Both ends of the duct structure were freed. A cable-splicing crew stood by in case of trouble. Pairs of 16x16 in. wood beams, separated about 4 in., were placed across the trench on 10 ft centers. These would take the steel carts.

• **The movers**—To lift, shift and lower the duct structure, the contractor designed and had built small steel carts. The carts—simply wheel-mounted blocks of steel, with two holes drilled from top to bottom—could run from one side of the trench to the other along the tops of the pairs of beams. Wood tracks guided them so the holes were over the 4 in. spaces. Each cart weighed 250 lb and could support more than 3 tons.

They were positioned over the ducts at the side of the trench. Lengths of ⅝ in. steel cable were looped around the duct structure at points beneath each cart.

Six-foot-long, 1 in. threaded steel rods were inserted through one hole in each cart, and passed through the 4 in. spaces to project below the beams. The rods were stopped and held by 1 in. friction nuts seated on the car tops. The cable loops were then connected to clevis pins that had been attached to the bottom ends of the rods.

When the nuts were turned down, the rod retracted upward, pulling the duct structure up with it. Turning up on the nuts extended the rods downward, lowering the load.

• **The move**—First, the rods lifted the duct structure about 1 in. off the shelf. Then workers scooped out 6 in. of earth from below the ducts. The freed structure now hung from the carts by the cable loops. The suspended load was left in this position overnight to check for any possible settlement.

Next day, the duct structure was ready to be moved to the center of the trench. With pinch bars at the wheels providing leverage, the carts were inched along the wood beams, taking the duct structure with them.

When the entire structure was above the new supports, the cart wheels were blocked and lowering began.

An electric wrench was used to turn up on the nuts and thus lower the rods and their load. The wrench crew moved from cart to cart lowering each rod a few inches at a time.

After the 6-ft-long threaded rods had gone about 5 ft, second rods were passed through the cart's other hole and connected to longer slings of cable looped around the duct structure.

Lowering continued on the first rods until entire load was transferred to the second set of rods. After these had gone 5 ft, still longer slings and the first rods—now retracted—were given the load.

The lowering operation lasted three days. As the duct structure descended, trench shoring jacks had to be moved out of the way. When the duct was nestled in the steel cradles, a wood roof was built over it for protection during the new building construction.

Throughout the entire operation there was no decrease in the gas pressure in the cables and all operating telephone wires remained intact.

When the new building is finished, the ducts will be inside a new cable vault, 14 ft above the floor. They will be stripped and the cables will be hung on racks. The vertical steel members will remain, and it is expected that a 6 ft thick concrete floor slab will be cast in this section of the new building. A tunnel will be dug from the property line along the street to the manhole so even that section of cable will no longer need duct protection.

This operation is believed to be the largest of its kind ever performed. A. E. MacDonald was job superintendent for Haas & Haynie.

The author received technical assistance from: R. C. Caughell, division construction and engineering superintendent; A. Bottarini, construction foreman; F. Staples, engineer—all of Pacific Telephone; and R. F. Kirkendall, engineer, Haas & Haynie.

PUBLIC
AUCTION
CONTENTS OF THESE PREMISES TO BE AUCTIONED MAY 12, 2:30 P.M.
OFFICE FURNITURE, TYPEWRITERS, BOOKS, ADDING MACHINES, FILING CABINETS, RUGS, LAMPS, TABLES, COUCHES, CLOCKS, ETC.

An embezzler on our payroll brought us to this!

(From an actual case)

Discrepancies in our firm's books might never have been discovered if it hadn't been for an alert bookkeeper. When we questioned our treasurer his explanation seemed plausible enough—but that night he skipped town!

We soon discovered that this trusted employee had really been a very clever thief. He had juggled the books skillfully enough to drive a big car, live in a fine home, entertain lavishly . . . with our money!

An audit showed that he had embezzled more than $100,000 over a seven-year period. The loss was more than we could take—we were out of business.

* * *

This firm might still be flourishing if management had had the foresight to invest in a Hartford Blanket Fidelity Bond. It offers solid protection against employee dishonesty.

If losses occur, a Hartford Blanket Fidelity Bond makes good for money, merchandise, equipment, or other company property stolen by anyone working for you.

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New York Underwriters Insurance Company, *New York 38, New York*
Northwestern Fire and Marine Insurance Company
Twin City Fire Insurance Company, *Minneapolis 2, Minnesota*

Dam Trench Drained from Below

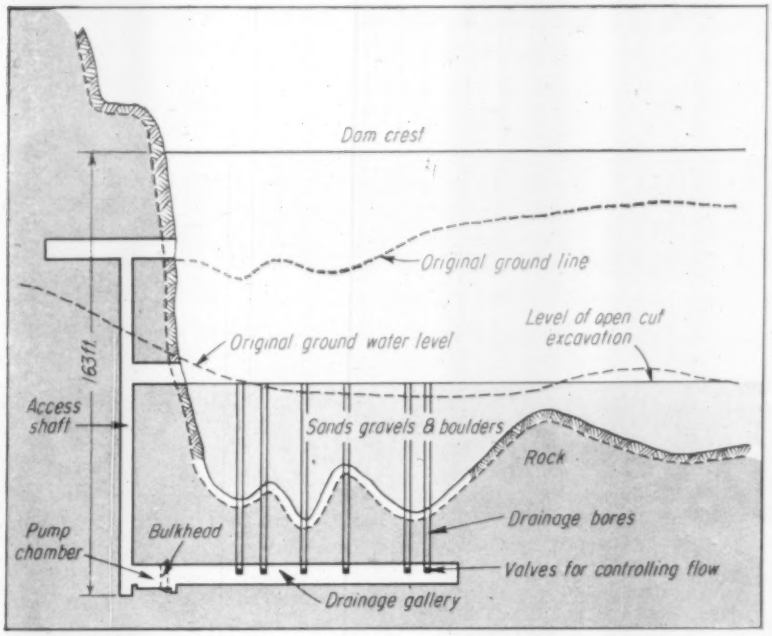
▸Here's what they did . . .

Builders of New Zealand's Atiamuri Dam on the Waikato River came up with a neat answer for draining a cut-off wall excavation in a highly porous sand and gravel formation under the dam site. They drove a tunnel through rock underlying the watery sands and dropped the water table by draining the water into the tunnel through drill holes.

Atiamuri Dam consists of a 500 ft long concrete gravity structure over the present riverbed and an 800 ft long earth wing on the left bank.

The earth wing stands over the porous deposits of the ancient riverbeds, which vary in depth from 50 to 120 ft. These beds had to be sealed off down to the underlying rock.

Boulders prevented the driving of sheet piling and tests showed cast in place piles wouldn't work. Therefore a reinforced concrete cutoff wall five ft thick was placed.



▸Here's how they did it . . .

First, the trench for the watertight core and shoulder material was excavated to normal ground water, about 60 ft down. Then a much narrower trench was dug for the placing of the concrete cutoff wall. The second trench's depth varied with the depth of the underlying sound rock. Steel sheeting with timber bracing was used to hold the sides of the trench. The sheeting was driven in 6 ft increments so it could be removed as concreting progressed.

To keep the trench dry, a 6x8 ft horizontal header at original ground level was extended 70 ft into the rock of the right bank. The contractor then sank a vertical shaft 125 ft down and pushed the drainage gallery through the rock below the dam site for 330 ft. Vertical bores were drilled from the open trench into the gallery and fitted with control valves. Then a pump chamber was installed.

Pumping began at a rate of 1,800 gpm, and after two days depressed the water level along the length of the cut and in an area wide enough to allow excavation and placing of the cutoff wall. Pumping at 250 gpm maintained the depressed water level. The gallery, access drive and shaft were then sealed with concrete.

A 4x8 ft gallery was built on top of the concrete cutoff wall to extend into the core of the earth wing.

While the dam was being built above, crews in the gallery drilled through the cutoff wall to place a grout curtain 30 ft into the rock along the main axis of the dam.

Atiamuri Dam is the fifth of a chain of seven hydro stations on the Waikato. It should be finished by the end of the year. It will have an installed capacity of 63,000 kw. The gravity structure required 154,000 cu yd of concrete and is 120 ft high. The earth wing contains 460,000 cu yd of material 100,000 cu yd in the core alone.

Atiamuri is being built by the New Zealand Ministry of Works under Commissioner F. M. Hanson. C. W. O. Turner is chief engineer and J. H. Macky is project engineer. Sir Alexander Gibb & Partners designed the project.

Westinghouse Starts New A-Power Firm in Europe

To promote sales of its atomic energy power plants in Europe, Westinghouse Electric and Manufacturing Co. has organized a special company with headquarters in Geneva. The new firm—dubbed Westinghouse International Atomic Power Co.—will also work with European manufacturers licensed by Westinghouse.

The European organization will operate as part of the parent company's over-all atomic power setup, which has produced the reactors for the atomic submarines and the Shippingport atomic power plant near Pittsburgh.

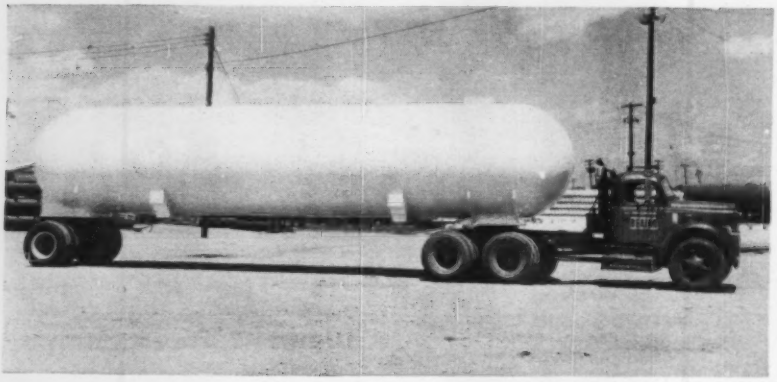
Kenneth D. Nichols, former general manager of the U. S. Atomic Energy Commission, is chairman of the new firm; Raymond Giguet, deputy director of Electricite de France, is president; and Peter Schmidt, of Westinghouse Electric International Co., is manager of licensee relations.

Build Now, Decide Later

Build the foundations now and decide about the superstructure later. That's the plan of Venezuela's University City Institute, left with a $900,000 hole in the ground following the ousting of dictator Marcos Perez Jimenez.

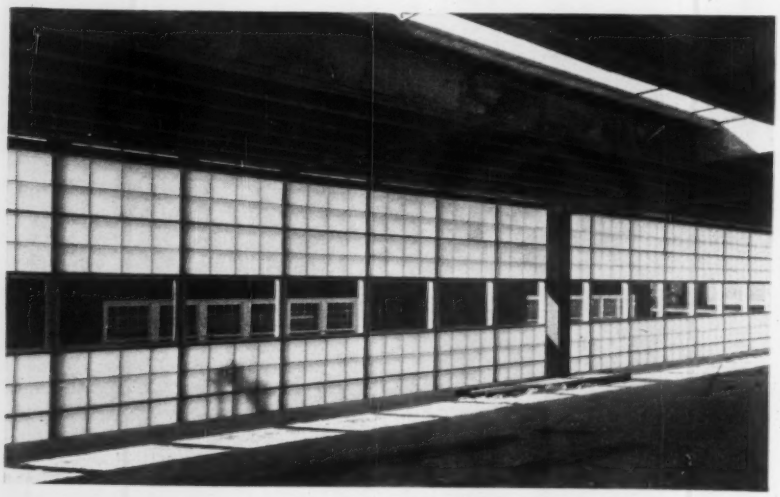
Jimenez had planned a 615 ft high, 54 story skyscraper in the center of Caracas on land valued at about $30 per sq ft. It would have been the world's tallest reinforced concrete building. A $9 million contract was awarded. But after Jimenez was ousted last January, the Ministry of Public Works cancelled the project, saying it would have yielded only 1½% on the investment. The building was planned to provide rental income for the Central University.

The government has now decided to complete the four-basement foundation and first floor as originally planned. Architects are restudying plans for the skyscraper with the idea of building a scaled-down version of the original scheme.



Rig Spots Fuel Where It's Needed

Fuel storage where you want it is possible with a new mobile storage tank now being marketed. The 9,000 to 14,000 gal tanks mount on running gear that, in turn, is towed by a tractor with a fifth wheel. When the portable tank reaches the job site, it is jacked up and set on piers. The running gear is then removed, and with the tractor is ready to haul another mobile unit. These rigs are now used to supply LP gas fuel (Liquified Petroleum) to highway contractors. J. B. Beaird Co., Inc., Shreveport, La.



New Curtain Wall Is Thin Glass Block

A prefabricated curtain-wall system composed of lightweight glass units, 2 in. thick and 12 in. sq, assembled and cemented in panels, is now on the market.

The "Thinlite" curtain wall system incorporates all the structural members and units needed to enclose a building, plus exterior and interior finish, insulation, and a means of attachment to the building.

Its basic units are made of daylight-controlling, pressed prismatic glass. They are the wall finish inside and out. Standard panels are 2 ft high and either 4 or 5 ft wide.

Basic panels are available in three colors: soft white for general use, blue-green for severe sunlight exposures and golden yellow for shaded walls. They may be supplemented with Thinlite ceramic-face glass panels, clear panels, decorative glass panels, porcelain panels and other special types. Window panels come either fixed or projected. All panels have the same perimeter so that they are interchangeable.

Panels are bolted to vertical extruded aluminum struts, spaced 4 or 5 ft apart. Extruded aluminum edge members interlock with each other. Gaskets form weatherproof vertical joints between struts and panels. Struts also are isolated from the wall by gaskets.

Vertical batten strips are fitted with their own special attachments and have gaskets, which, when used in combination with struts, form vertical weather seals on both sides of the panels. Extruded sill members have their own gaskets and are pre-drilled for strut attachments. Owens-Illinois, Toledo 1, Ohio.

German-Built Engine Line Gets American Distributor

Hercules Motors is sole distributor of the German-built "Jlo" line of air-cooled diesel and gasoline engines.

The diesel is offered in two basic models: 7 hp, 2,500 rpm and 12 hp, 2,000 rpm. The one-cylinder diesels feature cast aluminum cylinder block, crankcase and piston, with engine weights of 110 and 190 lb, respectively. Hercules Motors Corp., Canton, Ohio.

For the Smaller Projects An 8 Cu Yd Scraper Model

In contrast with LeTourneau's huge 60 yd scraper, Clark Equipment Co. is marketing an almost miniature earth-mover. The "Michigan" Model 110 four-wheel scraper is designed for smaller projects, self-loading jobs, and clean-up or finishing work. It has a struck capacity of 8 cu yd, a heaped capacity of 10.5 yd.

Model 110's cutting edge consists of four interchangeable and reversible sections to permit offset or straight blade arrangements. The scraper is pulled by a "Michigan" 180 Tractor Dozer, or other prime mover. The entire load-haul-dump cycle may be hydraulically controlled from the tractor seat. It has a top speed of 27 mph, when drawn by the tractor, and travels on four wide-base tubeless tires.

The scraper is 27 ft 7¼ in. long, 8 ft 4½ in. wide and 9 ft 6 in. high. Its empty weight is 14,450 lb; fully loaded it weighs 40,450 lb. Construction Machinery Div., Clark Equipment Co., Pipestone Road, P. O. Box 599, Benton Harbor, Mich.

(New Products continued page 53)

Shoring strength pays off with safer, faster tunneling under nation's capital

Tunneling in the midst of some of the nation's historic buildings—the U.S. Capitol, Supreme Court, Senate Office Buildings, Library of Congress and the Methodist Building—Square Construction Company of Baltimore, Maryland, is constructing a 2100 foot sewer tunnel system. And at no time during the tunneling operation is the free flow of traffic or the beauty of the area overhead being interfered with.

THE OUTSTANDING SHORING STRENGTH of the Commercial steel tunnel liners being used on the job is an important factor in keeping senators and railroad trains directly overhead on schedule. This despite the fact that both the senatorial subway between the Capitol and the Senate Office Buildings and a railroad tunnel to Washington's Union Station are only five feet above the new tunnel for at least 40 feet of its length.

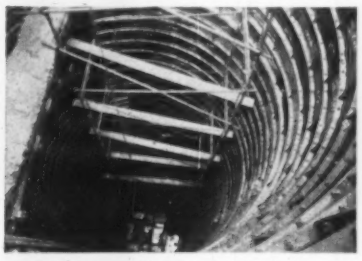
A SAVING OF $15,000 on material handling alone has been made possible because of the easier, one-man handling of Commercial liner plates. Only six sand hogs are required in the tunnel heading during each working shift.

The first of three shafts on the job, 65 feet deep and 17 feet in diameter, was completed in just one week because of the ease of installing Commercial liner plates. Rapid progress is being made on the six-foot high by six-foot wide tunnel being excavated through wet gray silt, sand, clay and organic matter.

INHERENT DESIGN ADVANTAGES of Commercial liner plates—continuous inside flange with solid corners, easier flange-to-flange bolting all in the open, precision-matched bolt holes—made for quicker, simplified erection and superior shoring strength.

"Commercial tunnel liners have made this operation simple, neat and economical," says Frank P. Ragonese, President of the Square Construction Company. He adds, "They insure the safety of our workers and eliminate the hazards of cave-ins."

ENGINEERING ASSISTANCE—The benefit of Commercial's 25 years of experience in the design of supports for soft ground or rock tunnels is yours for the asking. Just call on Commercial in the planning stage of your next tunnel project—sub-surface or surface, long or short. There's no obligation. Write to The Commercial Shearing and Stamping Company, Dept. E-40, Youngstown 1, Ohio.



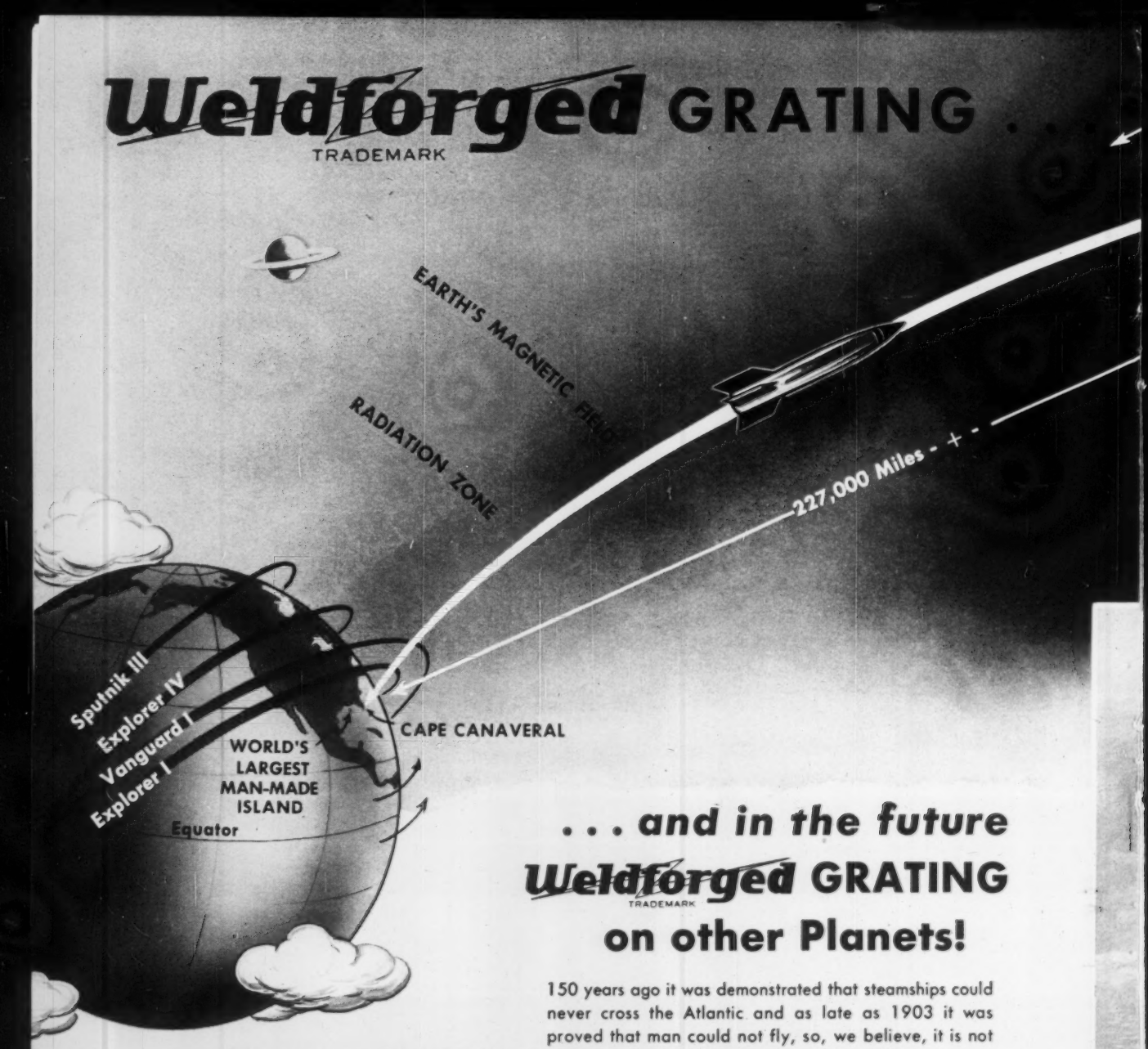
TUNNEL ENTRY SHAFT on First Street will be connected with a second working shaft in front of the Capitol by 1600 feet of tunnel right under Constitution Avenue, which will in no way interfere with traffic directly overhead on Washington's busy thoroughfare.

FOR GREATER ECONOMY, coarse-threaded bolts inserted through matching holes in the continuous inside flanges speed installation progress, while the 8,000 Commercial liners used on the job save on metal—will vary in thickness as best suits the load

COMMERCIAL
shearing and stamping

Weldforged GRATING

TRADEMARK

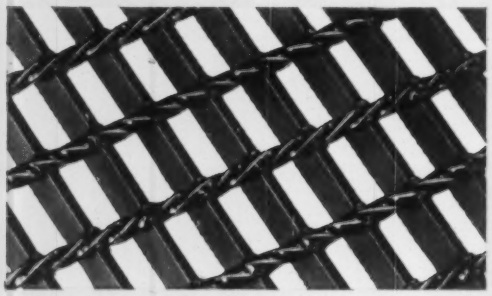


. . . and in the future Weldforged GRATING on other Planets!

150 years ago it was demonstrated that steamships could never cross the Atlantic and as late as 1903 it was proved that man could not fly, so, we believe, it is not unreasonable to say that our grating will be in use on other planets in the not-too-distant future.

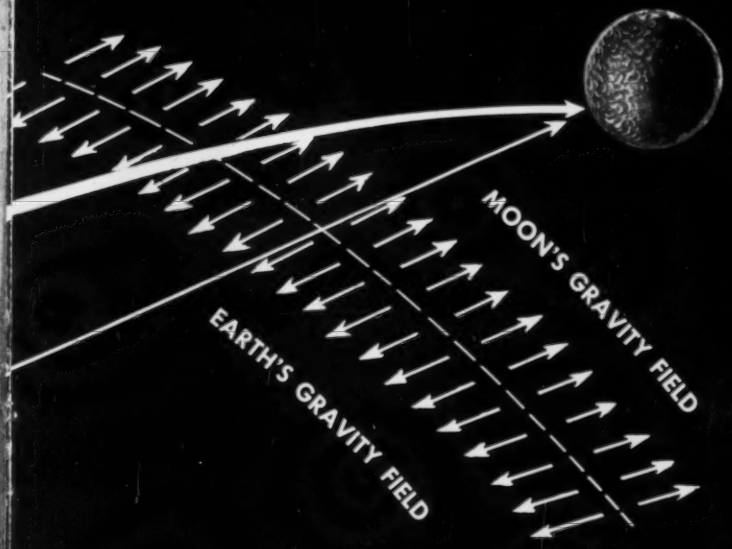
Already, in a short span of 12 years, we have become one of the leading grating manufacturers in the world today. Our installations are located all over the United States and in many foreign lands. One of our latest is on the largest steel island . . . for Freeport Sulphur Company. (See photograph at right). Here, approximately 300 tons of our galvanized welded steel grating have been installed.

Having pioneered many new designs and improvements in the grating field, today we are in position to furnish grating for every possible need . . . in steel, stainless, or aluminum; and in welded, riveted, pressure-locked, or our new Roll-Lock, designs. We invite your inquiry for our new catalogs. Address: Dep't E-10.

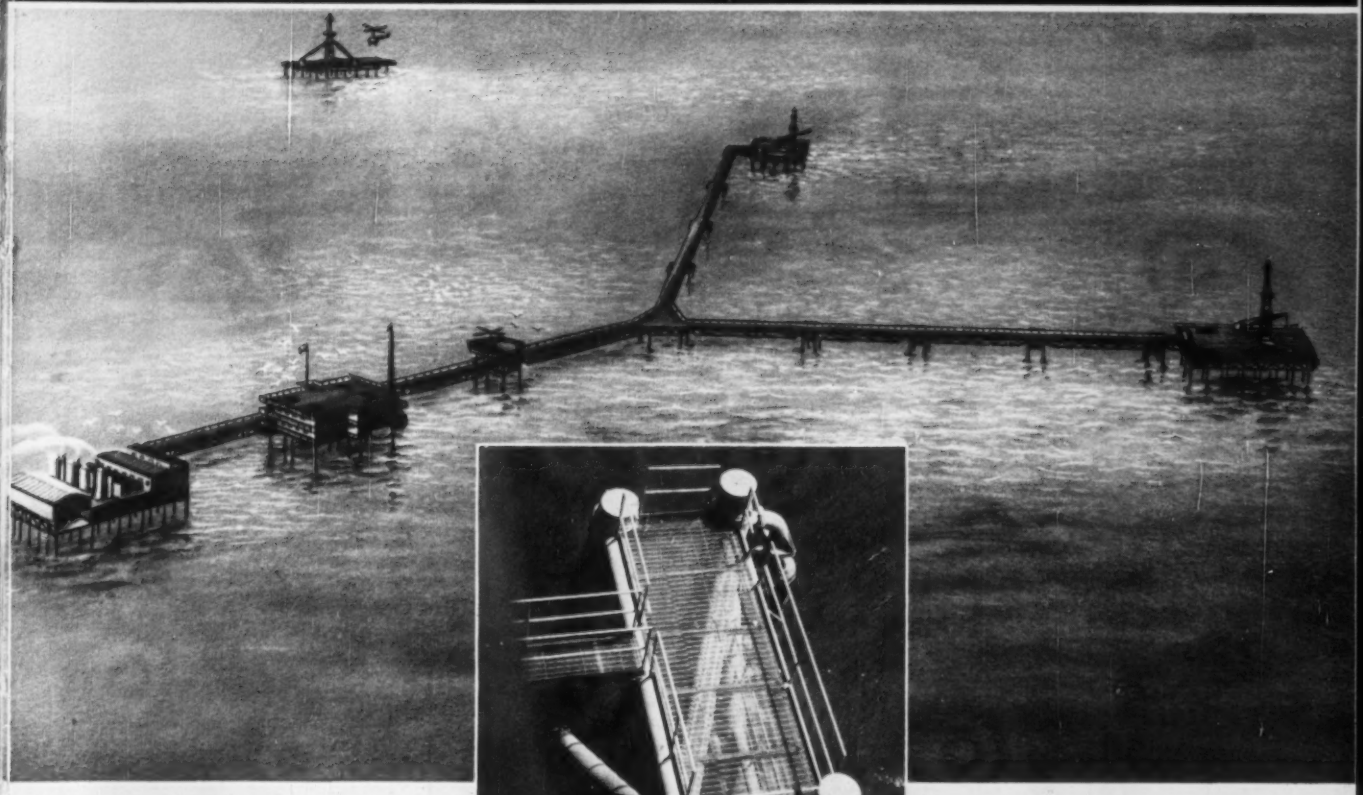


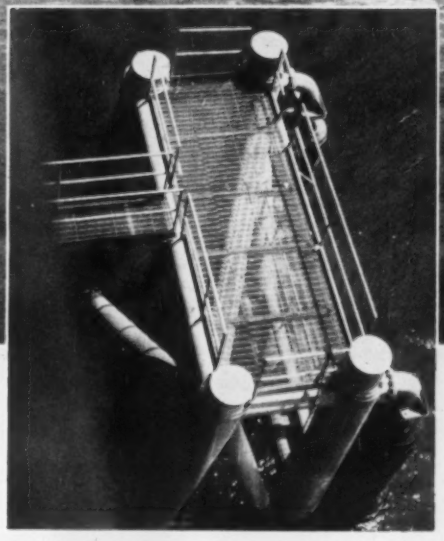
Spiral bars are Weldforged into bearing bars to form solid, one-piece units. Spirals alternate right and left and are slightly raised above bearing bars for greater safety underfoot.

WELDFORGED GRATING & TREADS—GREULICH 4-WAY OPEN STEEL BRIDGE FLOORING—STREET LIGHT STANDARDS



...ON THE WORLD'S LARGEST S-T-E-E-L ISLAND!





World's largest steel island 7 miles off the coast of Louisiana. This first off-shore sulphur mining plant is Y-shaped, stretching for ½ mile and reaching 60 ft. above the water. Structure is principal part of a $30 million project undertaken by Freeport Sulphur Company to develop a major new sulphur deposit known as Grand Isle.

THE FORGES OF KERRIGAN

KERRIGAN IRON WORKS, Inc. NASHVILLE, TENNESSEE

General Sales Office, 280 Madison Avenue, New York City

USED BY MEN WHO BUY EQUIPMENT FOR WHAT IT SAVES

More Power...Easier Operation...Less Maintenance

We put it squarely up to builders and contractors all over the country. Homelite engineers wanted to know what you need in a lightweight gasoline engine driven generator. And here's the Homelite solution . . . a brand-new unit that weighs only 140 pounds and gives you full 3000 watts. It has the extra power to run extra tools and floodlights. And you don't have to operate rheostats or other controls. The voltage is automatically controlled within four per cent from no load to full load. This new Homelite model 8A is completely free from trouble makers. No DC brushes. No commutator. No DC windings on armature. See it in action, right away. Two models are available . . . 115 volt and 115/230 volt, both 60 cycle, AC.

Homelite factory branches are located throughout the country. Your nearest one is as close as your phone. Call them or write for convincing demonstration or rapid service in any way.

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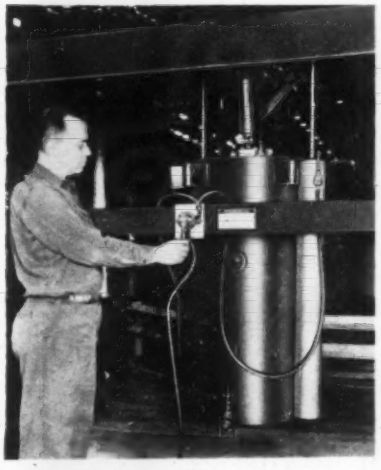


Pneumatic Tank Lifter Speeds Maintenance Work

A pneumatic tank lifter is available for fast raising and lowering of frame-mounted 15 to 69 kv oil circuit breaker tanks. The device consists of two 20 lb cylinders that are attached to the circuit breaker tanks, and a control valve that is attached to the horizontal member of the circuit breaker frame.

To raise a tank of oil, the operator pushes the valve to the right, equalizing the air pressure in the two lifting cylinders, and the tank rises in about 3 minutes. Tank lowering takes a little over one minute as air is released.

The source of compressed air used by the tank lifter is the air receiver and compressor unit that is a part of each pneumatic breaker operating mechanism. If it is desired to use the pneumatic tank lifter with solenoid operated breakers, a small portable air receiver and compressor can be supplied. Westinghouse Electric Corp., P. O. Box 2099, Pittsburgh 30, Pa.

Hydraulic Pipe Squeezer Offers Mechanical Locknut

A hydraulic pipe squeezer now available features a locknut that assures positive locking regardless of temperature and time, claims the maker.

The tool has a variety of uses, including relocation and repair of lines, shutting off service when valves are inaccessible, and permanent closing of service lines. It can be used in temperatures from —65F to +160F.

Two models are available: a 40 ton unit designed for use with cold steel pipe up to 2½ in. nominal size, and a 15 ton unit for heated steel pipe up to 2 in. nominal size. Regent Jack Manufacturing Co., 11905 Regentview Ave., Downey, Calif.

"Trac-Hammer" Allows Rig To Take On More Duties

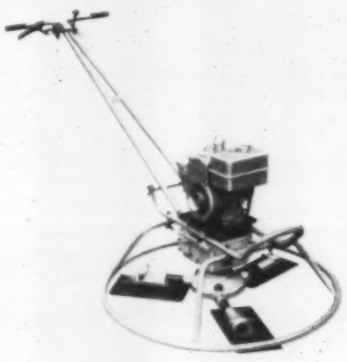
Vulcan Iron Works and Gardner-Denver Co. have jointly produced a multipurpose "Trac-Hammer" unit for concrete breaking, pile driving or drilling operations.

It is an adaptation of the Vulcan Portable Pile Hammer for use on Gardner-Denver's "Air-Trac" drilling rig. And it is necessary only to mount another bracket on the rig mast to convert from drilling to pile driving. With self-propulsion and an interchangeable hammer and drill, the rig can work indoors, reach corners and curves, and operate in other usually inaccessible areas.

The machine, which tows its own compressed air supply, has an "all-angle" boom to drive piles or drill holes from almost any position.

The hammer requires an air pressure of 60 psi and can deliver 303 blows per minute with a "striking weight" of 100 lb. The portable hammer has a rated striking capacity of 386 ft-lb and a total weight of 786 lb.

Two five-cylinder radial air motors power the "Trac-Hammer" through a double-chain drive. One man controls all operations from a central control panel. Vulcan Iron Works, Inc., 327 North Bell Ave., Chicago 12, Ill.



Power Trowel Equipped With Adjustable Blades

The Thor T-39, a 39 in. power trowel for floating and finishing concrete, is equipped with adjustable blades. While the machine is in motion, a handle control can adjust its 7 x 13 in. blades to any pitch. According to its manufacturer, the T-39 features a low center of gravity, uni-frame construction, blade-center suspension, and an automatic clutch. A nonrotating guard circles the trowel. Thor Power Tool Co., 175 North State St., Aurora, Ill.

Clip Speeds Metal Lathing, Cuts Beam Furring Costs

A new method for attaching metal lath to steel beams has been introduced by National Gypsum Co. The Gold Bond Furring Clip is set in place with a hand hammer. It is designed for use with fireproofing beam assemblies wherever lath is in contact with the lower flange of a beam.

Lath is formed to the required beam sizes and simply clipped in place. The manufacturer says that the clips take only seconds to secure, reduce lath application time to a minimum and cut furring costs considerably.

It is reported that the clip completely eliminates the need for framing around beams with cold rolled channels or pencil rods. The clip is made of tempered spring steel and furnished in four sizes to fit beam flange thicknesses from ¼ to 1 in. National Gypsum Co., Buffalo 2, N. Y.

Grid Compacter Is Built To Match Scraper Speed

Hyster Co.'s new DW20A "Grid" Compacter is a self-propelled, high speed machine designed to match compaction yardage with high spreading capacity of the latest earthmovers. The Caterpillar DW20 tractor is equipped with two "Grid" wheels mounted on driving axles and a two-wheel "Grid" towed unit. Grid wheels are heat treated cast alloy steel.

Steel slabs form the ballast in the tractor and towed unit, and sand is used in the wheel cones. This weight gives a reaction of 30,800 lb at the rear tractor wheels and 32,300 lb under the towed grid.

The compacter has speeds from 5.5 to 15.3 mph. Width covered per pass is 10 ft 2 in.; turning radius is 17 ft. Hyster Co., 2902 N.E. Clacamus St., Portland 8, Ore.

New ASCE president is Francis S. Friel, whose abilities and personality have won . . .

Success at Home, Fame Abroad

As a small boy, Frank Friel sold peanuts during polo matches at the Swank Philadelphia Country Club. Today he's a member.

As a boy, he wanted to be a civil engineer. And last week at 64 years of age, Francis de Sales Friel arrived at the pinnacle of his profession, the presidency of the American Society of Civil Engineers.

The way to the top—financially, professionally, and in the esteem of his fellow professionals—has been long but sure.

Along the way he has made a distinct success of his own career and of Albright & Friel, Inc., the 68-year-old Philadelphia consulting firm that has been his since 1945. He has been president of the elite American Institue of Consulting Engineers. He has headed the Federation of Sewage & Industrial Wastes Associations. And he has been chairman of the U.S. Committee on Large Dams, directing last month's Large Dams Congress in New York City.

Back in New York at ASCE's 106th Annual Meeting last week, Sanitary Engineer Friel succeeded Sanitary Engineer Louis R. Howson (of Alvord, Burdick & Howson, Chicago) as ASCE's president, the fourth consecutive consulting engineer to fill that post. Mr. Friel previously had been a vice president and director of the society.

Francis S. Friel comes to the presidency of ASCE as a widely known and highly regarded engineer whose successful practice afforded him time and means to devote his energies extensively to professional affairs. One top official in the ASCE staff has remarked, "It couldn't happen to a nicer guy."

• **Heavy service to profession**—What happens to ASCE isn't bad either, for President Friel told ENR he will devote at least 75% of his time for the year ahead to society affairs. This is about the same proportion he spent on all his "extra-curriculars" over the past year—ASCE's vice presidency, USCOLD and assorted other assignments.

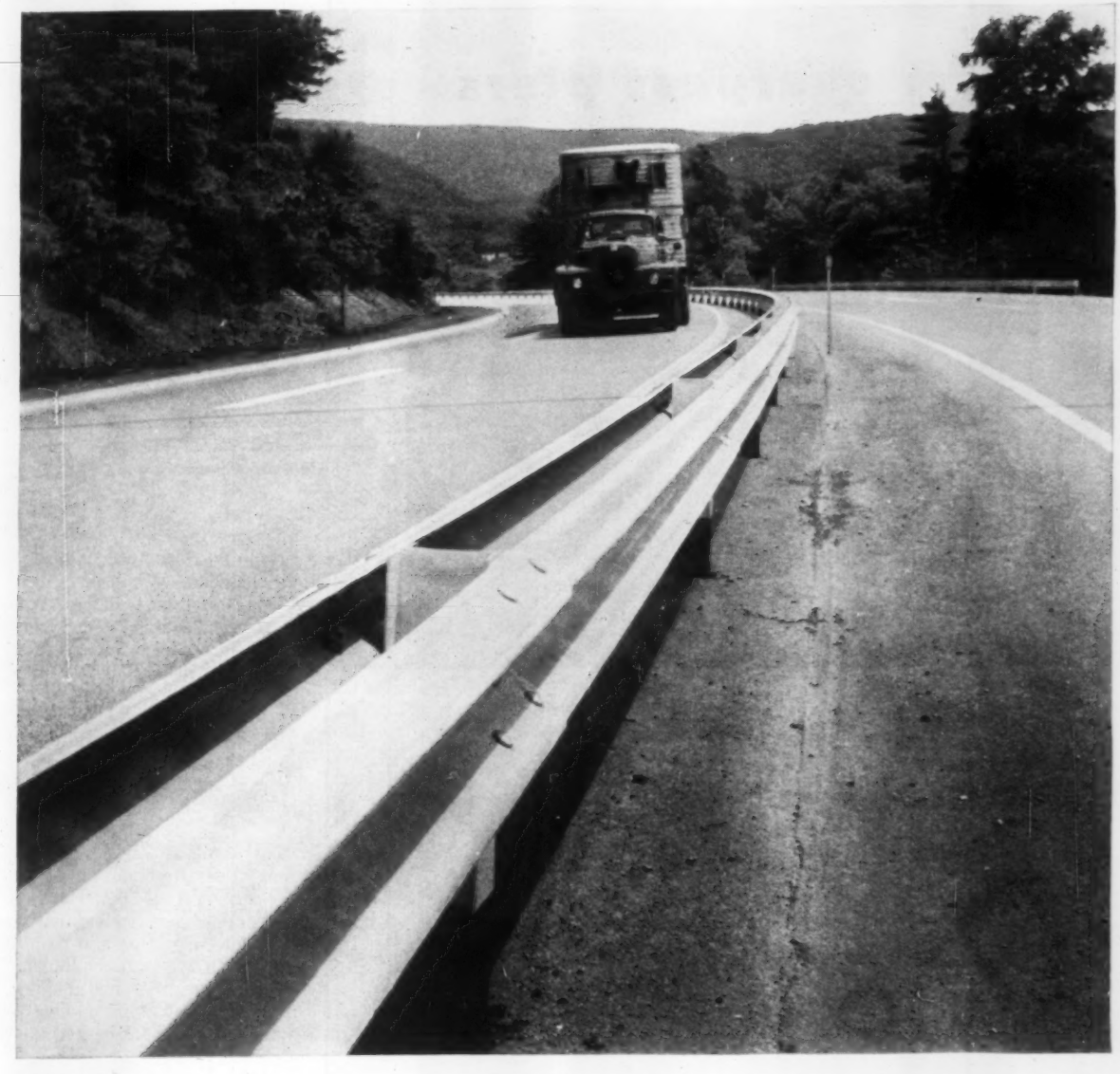
His extra-curricular activities have always been heavy. In his spacious, tidy office in one of Philadelphia's new Penn Center buildings, there are five boxes on a table against a wall. They are marked ASCE, USCOLD, Drexel, State Registration Board and Miscellaneous.

The USCOLD activities will lessen now—although he has been elected a vice president of the International Commission on Large Dams. He resigned earlier this year after 10 years as chairman of the fund raising committee for Drexel Institute of Technology in Philadelphia, his alma mater. He asked not to be reappointed after six years on Pennsylvania's engineer registration board. And he is making an effort to cut down on miscellaneous outside activities—to devote himself as fully as possible to his one-year term as ASCE president.

• **Success story**—How Albright & Friel, Inc., will be run while its president, treasurer and majority stockholder devotes about a quarter of his time to it is the real secret of Francis Friel's success—the secret, in fact, of how he came to be ASCE's president.

Mr. Friel joined Albright & Mebus after World War I, in which he saw lots of action—got a Distinguished Service Cross and a Purple Heart—as an Engineer lieutenant. With the late Chester E. Albright he organized Albright & Friel as a corporation in 1931 and became its vice president. In 1945 he became owner and president when Mr. Albright relinquished his stock and retired.

Now there are others in the firm whom Francis Friel calls his partners (and they, significantly, call him Mr. Friel). His letterhead lists John Gruss, Alfred Estrada, Harvey Bale, John Sieber, Romeo Falciani, Joseph Salvatorelli and Charles Rabenold.



Bethlehem Beam Guard Rail Engineered for Safety

Bethlehem Beam Guard Rail is fully tested for a minimum breaking strength of 80,000 lb, enough to distribute an impact force over at least 16 posts on either side of the point of collision.

Other advantages in using Bethlehem Beam Guard Rail: high visibility in bad weather or at night, easy erection, low maintenance, trim appearance. These sturdy beams are made from 10- and 12-gage steel.

Our catalog describes all these advantages in detail, and includes valuable engineering data. Just phone or write our nearest sales office for your copy, or write us at Bethlehem, Pa.

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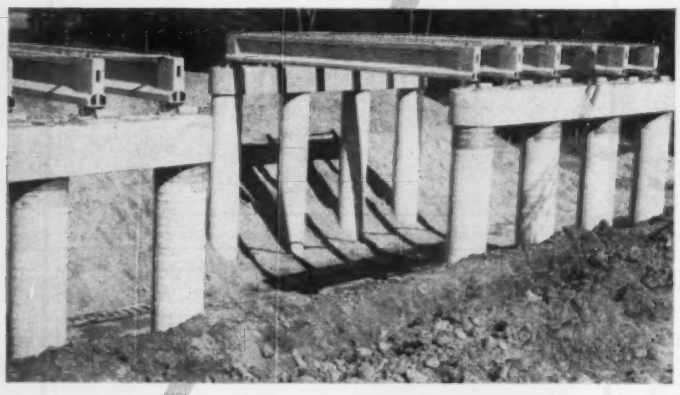
Form overpass piers by this cost-saving method



Overpass south of Baldwin, Wis.
Wausau Construction Company, contractors.
Wisconsin Highway Dept., designers.
DeLeuw Cather & Company, engineers.

Use low-cost
SONOCO
Sonotube.®
FIBRE FORMS
to form round concrete columns

Save time, money and labor!

For the fastest and most economical method of forming round columns of concrete, use Sonoco Sonotube Fibre Forms.

Projects like the Baldwin, Wis. overpass on Interstate Route #94 prove the point. On this job, 44" I.D. Sonotube Fibre Forms were used to form round concrete columns 22½' and 26' height.

Because these fibre forms are lightweight and easily handled and minimum bracing is required, columns are formed quicker.

These labor-saving advantages, together with the low cost of Sonotube Fibre Forms, make this method of forming round columns of concrete the fastest and most economical method in use today!

Order Sonotube Fibre Forms in sizes from 2" to 48" I.D. Shipping length 18' unless otherwise specified. Available in three types: Seamless (pat. pend.), "A" Coated (pat'd) and "W" Coated. Distributors in cities from coast to coast.

See our catalog in Sweet's

For complete technical information and prices, write

- HARTSVILLE, S. C.
- LA PUENTE, CALIF.
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SONOCO
Construction Products
SONOCO PRODUCTS COMPANY
3501

Serious side—Francis Friel talks over details on a major project.

Owner Friel has shared his ownership and created a new directorship, which capably runs his firm. With one exception these directors are a generation younger than their president. And he hopes to stay with them long enough to see their successful future assured; he doesn't intend ownership or control for other than active members of the firm.

The 1931 incorporation was intended to perpetuate the practice and give the firm financial stability. This it has done admirably—and should continue to do.

The big business of design and supervision of construction on 19 assorted World War II projects gave Albright & Friel, Inc., momentum to continue engineering some $20 million worth of construction projects annually in the postwar years. A staff that has varied from 20 to 300 in number is now maintained—quite steady and busy at about 80.

With 214 active orders on the books this time last month, the firm was working a wide variety of projects. Traditionally specialists in the sanitary engineering fields of water supply and sanitation, A&F is now getting into highway projects around Philadelphia, while its far-famed president is consulting on future Panama Canal improvements.

The future seems rosy indeed for this financially stable firm, which boasts a profit-sharing program for all employees; one of the fringe benefits Frank Friel thinks can't be topped by any consultant. And, last week, as he moved through a full, hectic schedule of meetings, speeches and social affairs, the newly inaugurated Mr. Friel could be confident that all went well in his firm's headquarters in Philadelphia.

• **World traveler**—Over the years Francis Friel was closely associated with Joel

D. Justin, Philadelphia consultant and authority on dams, who died in 1950. Mr. Justin shared office space with Albright & Friel, consulting with the organization on water supply dams.

In 1948 Mr. Justin talked Mr. Friel into going to Sweden with him to an executive committee meeting of the International Commission on Large Dams. He hasn't missed an important Large Dams meeting since, going abroad nearly every year—to India, to France, to Turkey.

While his firm has built its reputation largely on work in Pennsylvania, Delaware and New Jersey (with notable forays into North Carolina, Missouri and Ohio), Francis Friel's personal reputation has become world-wide in scope.

• **A charmer**—The Friel personality is polished and pleasing. He has all the attributes of a successful politician—including a wife whose charm matches his.

His smooth platform manner was perhaps at its best at the 1955 dinner of the American Institute of Consulting Engineers. As AICE president that year he presided over a dais that included former President Herbert Hoover, Alfred Sloan, Charles "Boss" Kettering, Benjamin Fairless and a full complement of engineering society presidents and other notables. Toastmaster Friel had the situation completely in hand.

Honors have come easily to Francis Friel in recent years. Drexel granted him an honorary doctor of engineering and just last month the University of Scranton proclaimed him a doctor of laws, *honoris causa*. In February of 1956 the National Society of Professional Engineers' local chapter named him Philadelphia's outstanding engineer. He is a member of Tau Beta Pi and Chi Epsilon fraternities; he is also a Papal Knight.

• **His ASCE challenge**—The two major efforts he espoused in his inaugural address last week are actually chores he inherits. First, he'll see the society through a big year of fund raising for the planned new Engineering Center in New York City. Second, he'll push for unity in the engineering profession—unity through Engineers Joint Council, as has been fostered by ASCE presidents before him.

To his fund raising effort, he will bring the experience of having directed a $5 million financing program over the years for Drexel, to say nothing of his collection of funds to run last month's Large Dams Congress.

In the unity drive he will work with Enoch R. Needles, an ASCE past-presi-

Time-saving forms for stub piers

Merle Hay Plaza Shopping Center, Des Moines, Ia. Bernard Greenbaum & Associates, Chicago, Ill., contractor and architect.

Save time, money and labor with

SONOCO

Sonotube.®

FIBRE FORMS

Low-cost Sonoco Sonotube Fibre Forms provide the fastest and most economical method of forming round columns of concrete!

On the Merle Hay Plaza job, 110 columns were set and poured in a single day. These stub piers and pedestals varied in height from approximately 2′ to 11′ and were formed by Sonotube Fibre Forms of 22″, 24″ and 30″ I.D. The entire project contains over 600 columns.

Sonotube Fibre Forms are lightweight, handle easily and require minimum bracing. Can be sawed to size on the job or ordered in specific lengths.

Sizes from 2″ to 48″ I.D. Standard shipping length is 18′ unless otherwise specified. Available in three types: Seamless (pat. pend.), "A" Coated (pat'd) and "W" Coated. Distributors in cities from coast to coast.

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Construction Products

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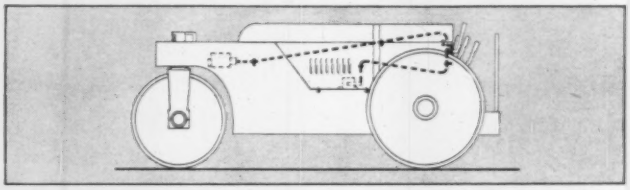
SONOCO PRODUCTS COMPANY

TRU-LAY PUSH-PULLS

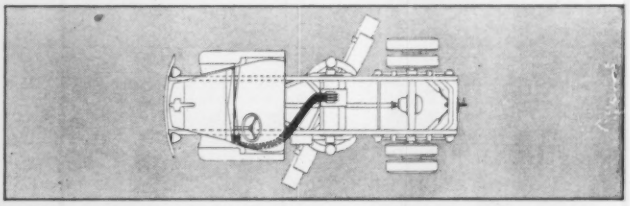
give trouble-free, lifetime service for remote control of construction and quarrying equipment

Operators of Construction or Quarrying Equipment can be certain of maintenance-free service from TRU-LAY PUSH-PULL CONTROLS because of their precision manufacture—rugged construction—lubrication for life of the inner, working member at the factory—complete sealing of the entire unit (a vitally important factor in tough, outdoor operations) against dust, dirt or moisture.

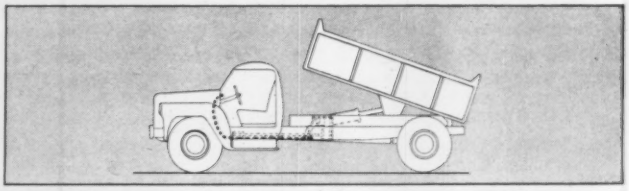
We have never heard of a TRU-LAY FLEXIBLE PUSH-PULL CONTROL *wearing out in normal service.* Examples of heavy-duty applications are shown below. Users of such equipment benefit from simplified equipment design and improved operation.



• Shown here is a tandem roller where two different PUSH-PULL cables are used to facilitate operation. One cable, 156" long, is capable of a 2" stroke to operate the hydraulic steering valve at the front of roller. The second, shorter cable operates tail shaft governor which keeps roller speed constant, upgrade or down.



• More room in the cab of this snow plow was one of the advantages of installing PUSH-PULL cables. This permitted the hydraulic valve to be located at a more convenient point in the chassis. "There are so many things you can do with these flexible cables compared to the old fixed installations," the manufacturer told us.



• Raising and lowering of the dump body on a famous line of hydraulic dump trucks is via TRU-LAY PUSH-PULL cables. With PUSH-PULLS this merely entails the pulling of a button on the dash. The installation did away with cut-up floor boards and levers in the truck cab. TRU-LAY PUSH-PULLS brought easier installation, more convenience and less maintenance.

For complete information
we'll be glad to send you a copy of ***Bulletin DH-461...***

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Automotive and Aircraft Division
AMERICAN CHAIN & CABLE

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president who was just re-nominated as EJC president.

The boy who went to Drexel because "that's where poorer boys went" and studied civil engineering because he just "wouldn't be anything else" has come a long way from Maryland's eastern shore to Philadelphia's Main Line. His many prominent friends back at the Union League on Broad Street, where he habitually lunches when in town, could be pleased last week as their local-boy-made-good made even better.

Careers

Business

Alvin Fromme and **Zorab Vosganian** have formed a partnership at 56 W. 45th St., New York City. They will specialize as structural consultants to architects. Both are graduates of Clarkson College of Technology and were formerly project engineers with Fraioli-Blum-Yesselman.

Henry S. Marshall has been named supervising engineer for New Jersey construction by Frederic P. Wiedersum Associates, architects-engineers. He was former president of the Inter-American Development Co., doing consulting and design work for American firms in South America.

Associations

Alex Stoudenmire has been named president of the Alabama Water Well Contractors Association.

Fred I. Rowe, partner and general manager of W. L. Johnson Construction Co., Columbus, Ohio, has been appointed chairman of the Construction and Civic Development Committee of the U. S. Chamber of Commerce for 1958-59.

Dudley W. Frost, executive director of the Port of Oakland, has been elected president of the American Association of Port Authorities. He succeeds **P. J. Mc Culloch** of Hamilton, Canada. New vice presidents are **D. Leon Williams**, Savannah, Ga.; **Col. Howard W. Quinn**, Callao, Peru; and **B. J. Caughlin**, Los Angeles.

Public Works

John D. McNeal has been appointed engineer of research for the Kansas State Highway Commission. He fills the vacancy created when **R. L. Peyton** recently was advanced to an assistant state highway engineer. For the last four years Mr. McNeal has been the commission's chief geologist.

Fred T. Tarbox has been appointed chief of the traffic bureau of the Ohio Department of Highways.

$60,000 bid, 32% below the high, gets . . .

Granite Falls Substation Contract

Awarded September 8, this $59,994 contract is for 69 kv and 115 kv stage 03 additions to the Granite Falls Substation in Minnesota, for the Bureau of Reclamation Missouri River Basin Project, Transmission Division, South Dakota. Union Electric Co., Hinton, Iowa, the successful contractor, underbid the high bidder by over 32%, and was under the engineer's estimate by almost 17%. Grant Bloodgood is assistant commissioner and chief engineer of the USBR at Denver.

The government furnishes the following materials:

Item & manufacturer	Quantity	Est. wgt. (lb)	Est. deliv date
Transformers:			
Westinghouse Elec. Corp., 25,000 kva, 115 kv, 3 phase power, compl w/oil and tank-mounted arrestors	1	125,000	Mar. '59
Allis-Chalmers, 69 kv current	3	1,000 ea	Jan. '59
American Elin, 69 kv potential	3	1,100 ea	Feb. '59
Power circuit breaker, Schwager-Wood Corp., 69 kv, 1,500 mva type	1	10,500	Mar. '59
Lightning arrestors, 73 kv	3	200 ea	Mar. '59
Air switches, 3 pole, 115 kv	2	3,000 ea	Mar. '59
69 kv	3	2,000 ea	Mar. '59
Coupling capacitor w/tuning unit & potential device, Westinghouse Electric Corp., 69 kv	1	1,160	Mar. '59
Carrier current line tuning unit & associated single-conductor lead-in wire to coupling capacitor, General Electric Co	1	100	Mar. '59
Wave trap, General Electric Co., 400 ampere	1	400	Mar. '59
Control equipment		1,500	Mar. '59
unmounted		600	Mar. '59
Carrier-current transmitter set	1	400	Mar. '59
Coupling capacitor potential device adjustment unit	1	70	Mar. '59
Strand copper cable for grounding, 300,000 circular mil, hard drawn 1,000 lf		—	Mar. '59
Coaxial type insulated cable, type RG-8/U 600 lf		—	Mar. '59

Delivery dates given were to enable the bidding contractors to develop a tentative construction program.

The contracting officer may order the contractor to suspend work that may be subject to damage by climatic conditions.

Concrete containing 1½ in. maximum size aggregate must have a cement content of not less than 6 sacks per cu yd. Concrete containing ¾ in. aggregate must have a cement ratio of not less than 7 bags of cement per cu yd. Both must develop a minimum compressive strength of 3,000 psi at 28 days. Contractor must use 1% calcium chloride, by weight of cement, in all concrete placed when the weather is cold enough to require the protection of the concrete from freezing.

Minimum wage rates include: carpenters, $2.50; cement masons, $2.30; power shovel and crane operators, $2.99-$3.24; painters $2.00; common laborers, $1.55.

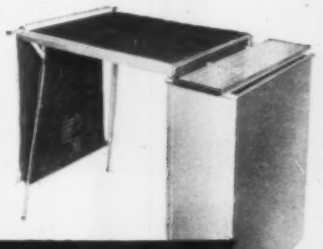
The bids included:

1C	Union Electric Co., Hinton, Iowa	$59,994
2	Gustav Hirsch Org., Inc., Columbus, Ohio	65,774
11	Commonwealth Elec. Co., Lincoln, Neb	88,778
EE	Bureau of Reclamation, Denver, Colo	71,949

Bids: 7-31-58 Items	Unit	Quantity	Unit Prices 1C	2
Exc for structs	cy	400	$1.00	$2.25
auger type footings, 15"ϕ	lf	140	5.00	2.00
18"ϕ	lf	70	1.50	2.30
Backfill	cy	280	1.00	1.20
compacting	cy	280	1.00	2.00
Gravel for fill f&p	cy	15	1.00	2.50
surfacing replace	cy	25	10.00	3.00
Sand bkfl & timb protect for buried insul elec cables	lf	160	0.10	1.00
Concrete	cy	130	36.00	48.00
Reinforcement bars f&p	lb	10,000	0.13	0.185
Steel structures f&e	lb	66,000	0.31	0.28
Single switch oper platfs f&i	ea	5	40.00	105.00
Alum cable trench covers f&i	lb	3,100	4.00	0.90
Equip identif signs f&i	ea	6	3.00	10.00
Phase identif signs f&i	ea	18	1.00	6.00
Insulating oil filter	gal	7,000	0.03	0.04
Copper cable for grdg system, 300,000 circular mil, hard drawn, bare i	lf	1,000	0.30	0.90
bare stranded, #4 0 AWG f&i	lf	200	4.00	1.60
#4 AWG f&i	lf	200	0.20	1.00
Elec conduit, rigid, 4" f&i	lf	10	2.00	8.00
2" f&i	lf	100	0.50	3.50
¾" & 1" f&i	lf	150	0.50	1.30
Insulated cable, 600 volt, single conduc #2 AWG f&i	lf	300	0.25	0.60
#6 AWG f&i	lf	4,000	0.10	0.20
#12 AWG f&i	lf	200	1.00	0.15
2 conductor, #10 AWG f&i	lf	2,000	0.14	0.30
4 conductor, #10 AWG f&i	lf	9,600	0.25	0.60
7 conductor, #10 AWG f&i	lf	850	0.35	0.90
12 conductor, #10 AWG f&i	lf	800	0.40	1.20
Coaxial cable i	lf	600	0.07	0.25
Transformers, 25,000 kva, 115 kva, 3 phase, power i	ea	1	1,300	3,000
69 kv, current i	ea	3	20.00	75.00
69 kv, potential i	ea	3	20.00	100.00
Power circuit breaker, 69 kv 1,500 mva i	ea	1	200.00	525.00
Lightning arrestors, 73 kv i	ea	3	20.00	50.00
Air switches, 3 pole, 115 kv i	ea	2	100.00	260.00
69 kv i	ea	3	100.00	200.00
Coupling capacitor potential device, 69 kv i	ea	1	30.00	60.00
Carrier-current line tuning unit i	ea	1	20.00	65.00
Wave trap, 400 ampere i	ea	1	30.00	85.00
Alum tubing, iron pipe size, 2½" f&i	lf	170	2.00	6.75
1½" f&i	lf	320	1.00	2.85
Copper tubing, iron pipe size, 2" f&i	lf	150	15.00	6.30
1" f&i	lf	300	1.00	3.15
Pin cap insulator stacks, 115 kv f&i	ea	15	50.00	130.00
69 kv f&i	ea	32	36.00	90.00
Station-post type insulator, 7.5 kv f&i	ea	4	5.00	18.00
All alum cable bus, 954,000 circular mil f&i	lf	500	1.20	3.25
556,500 circular mil f&i	lf	600	1.00	1.90
Copper cable bus, 750,000 circular mil f&i	lf	200	12.00	3.50
#4 0 AWG f&i	lf	50	10.00	1.00
Galv stl overhead ground wire, ⅜", 7 strand f&i	lf	400	0.20	0.40
Terminal boxes f&i	ea	2	35.00	55.00
Light fixtures, outdoor pipe, standard type f&i	ea	2	110.00	120.00
bracket type f&i	ea	5	70.00	80.00
Control equipment i	ls	job	130.00	1,600
Unmounted equip on existing cubicles, f & i; making internal switchbd changes	ls	job	440.00	750.00
Carr current transm set i	ea	1	60.00	110.00
Capacitor potential device adjustment unit i	ls	job	40.00	50.00
Paint exposed ext surf of outside masonry walls, existing bldg	ls	job	480.00	325.00

f&i furnish & instal f&p furnish & place i instal
Commence: 30 days after notice to proceed
Completion schedule: 300 calendar days
Liquidated damages: $40 cal/day

In the field, at the job or in the office



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881 East 141st Street, New York 54, N. Y.
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West Palm Beach, Fla

From Liberty Mutual: a concept of workmen's compensation coverage for today's economic conditions which provides

Protection in

—and how it cuts excess dollars from compensation insurance costs

The business-insurance rates you pay are, in the long run, determined by you

In today's business climate, it's more important than ever for you to keep your expenses down. If you have a large number of accidents, however, or suffer heavy losses over a period of time, you actually contribute to higher insurance rates for yourself. By doing everything you can *right now* to cut down on accidents and eliminate losses, you can help toward lowering your rates *in the future*—and help improve your company's profit picture.

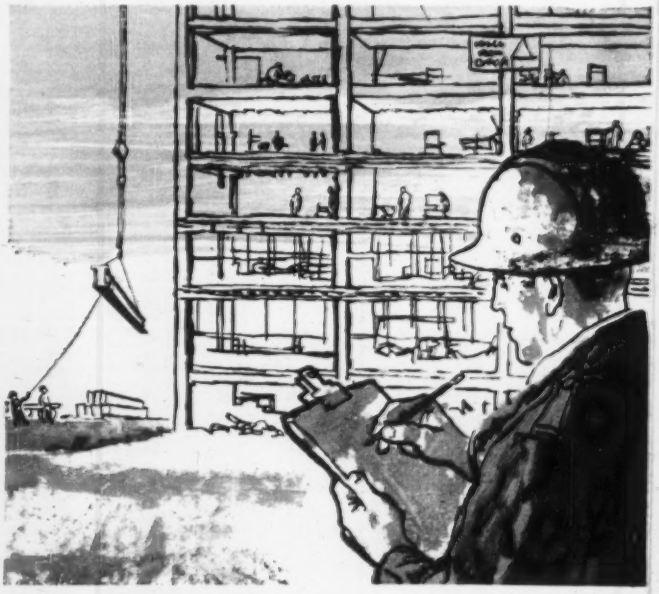
This is why Liberty Mutual—the company with the largest experience in workmen's compensation insurance—has over the years developed a forward-looking concept of business insurance which gives you protection in depth. From the start of your coverage with Liberty, a broad range of skills and resources can be put to work to anticipate and avoid trouble on your jobs and to keep future costs down.

Today, more than ever, *PROTECTION IN DEPTH* can be vital to the growth of your business

With competition so strong in the construction industry, it is apparent that the vigorous, efficiently managed companies will become the industry leaders of tomorrow. The protection in depth you get from Liberty not only helps you trim excess dollars from your insurance costs, but does it without sacrificing any of the coverage you need to safeguard your company during its growth.

Protection in depth has already helped Liberty establish an impressive cost-cutting record and a record for consistently attracting "blue-chip" accounts. Because we deal directly, our salesmen know their business—and yours. With the vast experience of the company behind them, they can competently handle unusual problems in all fields.

We encourage you to take steps to improve your insurance cost picture by becoming acquainted with protection in depth now. (You should also know about our dividends: since 1912, we have returned more than $455 million to reduce policyholders' insurance costs.)



depth

World-wide trouble shooter. A Liberty engineer goes wherever you have a job. With offices spotted throughout the U.S., fast, experienced help is always nearby. Liberty engineers have provided assistance even as far away as the Philippines and Greenland.

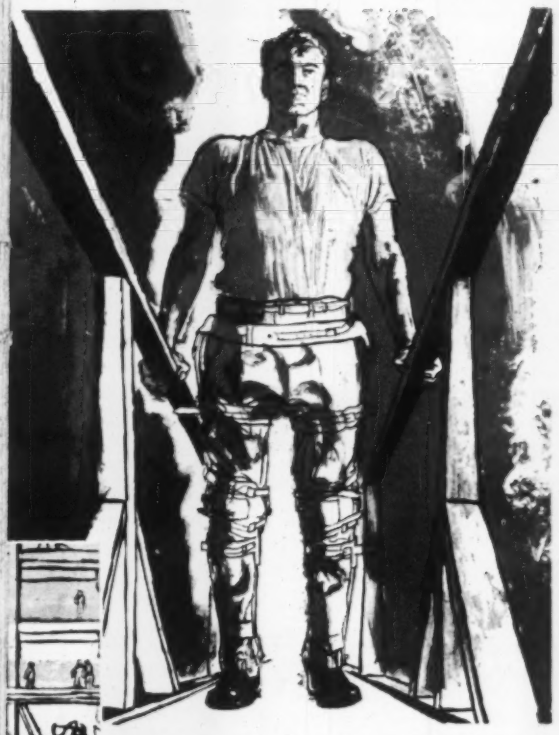
Behind *PROTECTION IN DEPTH* is the broad range of Liberty's special skills and resources

Liberty's special resources are sometimes unique, often broader in scope than most other companies or agencies can offer. Many are routine and offered as a standard part of our work. Others are ready to crack dangerous or money-wasting problems policyholders may have. Here are a few of them and how they can be put to work for you in a program that gives real protection in depth.

An 86-acre, loss-prevention research center. Here chemists, physicists and radiation experts work on extra-tough problems such as: When does worker fatigue begin to affect a man's efficiency? How can the "safe" amount of dynamite be predetermined for blasting in a particular locale?

A medical advisory service. Liberty retains top orthopedic surgeons in key areas to check diagnoses of serious injuries, advise attending physicians.

These Liberty "extras," and the others shown on these pages, all work to give you the best possible protection in depth. All are available to any policyholder who needs them. All of them can work with you to lower insurance costs.



Learning to walk...the second time. The facilities of Liberty's two rehabilitation centers are available to badly injured employees of policyholders. Through therapy and prosthetics, patients help themselves recover, get back on the job.

Keeping danger in check. Liberty's construction engineers conduct advance analysis of your jobs, look for accident hazards and ways to improve operating procedures. Guidance is offered on falsework design, materials handling, traffic plans, etc.

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Materials Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Clay Products, Lime, Plaster, Paint, Roofing: Last, Sep. 25; Next, Oct. 30.
- Wage Rates, Building Board, Lath, Insulation: Last, Oct. 20; Next, Oct. 30.
- Cement, Aggregates, Ready-mixed Concrete, Asphalt: Last, Oct. 9; Next, Nov. 6.
- Iron & Steel Products, Pipe: Last, Oct. 16; Next, Nov. 13.

LUMBER, TIMBER, PLYWOOD—PER M FT., B. M., CARLOAD LOTS F. O. B.

SOUTHERN PINE AND DOUGLAS FIR—

All Southern Pine is No. 2 common or better and for No. 1 N. C. Box. (Prices in Bold Face)

All Fir boards, dimensions, planks No. 2, Fir small timbers and timbers are No. 1. Lengths up to 20 ft. (Prices in italics)

	1x6 s4s	1x8 s4s	2x4 s4s	2x6 s4s	2x8 s4s	2x10 s4s	3x12 Rgh	6x12 Rgh	12x12 Rgh	LONG LEAF Y. P. Merchantable grade up to 20 ft. 2x12 Rgh	12x12 Rgh	PLYWOOD Rail freight increment (See note for base price) ⅜"	¾"
Atlanta †	$78.00	$79.00	$76.00	$79.00	$81.00	$85.00	$136.00			$121.00	$158.00	$22.32	$27.24
Baltimore *	95.00	100.00	100.00	100.00	100.00	105.00	114.00			170.00	185.00	25.92	31.60
	103.00g	*108.00g*	*128.00g*	*128.00g*	*128.00g*	*148.00g*	*138.00g*	*$155.00*	*$149.00*				
Birmingham †	89.00	83.00	75.00	89.00	85.00	90.00	105.00			115.00	160.00	21.78	26.58
	70.50	*70.50*	*70.00*	*73.00*	*73.00*	*88.00*	*73.50*	*70.50*	*70.50*				
Boston *****	94.00f	95.00f	103.00f	104.00f	104.00f	109.00a						25.92c	31.60c
	97.00k	*98.00k*	*113.00*	*113.00*	*113.00*	*113.00*	*132.00*	*132.00*	*154.00*				
Chicago **	111.00	114.00	108.00	122.00	130.00	131.00	126.00			154.00	154.00	22.45	27.37
	117.00	*116.00*	*129.00*	*127.00*	*127.00*	*128.00*	*156.00*	*156.00*	*156.00*				
Cincinnati *	93.00	94.25	86.50	90.50	95.00	102.75	116.00			129.50	127.50	25.00	30.48
	98.50	*98.00*	*102.50*	*104.50*	*100.50*	*116.75*	*129.75*	*129.75*	*129.75*				
Cleveland **	90/91	93.00	95.00	97.00	100.00	103.50						25.37	30.93
			107.00	*102.00*	*105.00*	*107.00*	*125.00*	*125.00*	*125.00*				
Dallas ‡	74.50k	74.50k	70.00k	70.00k	73.00k	75.50k	120.00k			130.00	125.00	18.72	22.80
Denver *	*Not in stock*		*122.50*	*122.50*	*122.50*	*127.50*	*136.00*	*148.50*	*153.80*			13.92	16.98
Detroit ‡	127.50	130.00	126.75	128.00	133.00	133.00				141.00		25.00	30.48
	136.00	*136.00*	*138.75*	*143.50*	*141.00*	*146.00*	*196.00*	*206.00*	*206.00*				
Kansas City ‡	120.00	120.00	120.00	120.00	125.00	135.00						16.56	20.16
	120.00	*120.00*	*120.00*	*120.00*	*125.00*	*125.00*	*150.00*	*225.00*	*225.00*				
Los Angeles ‡	*98.00*	*98.00*	*98.00*	*98.00*	*98.00*	*98.00*	*126.00*	*151.00*	*151.00*			16.61ab	20.25ab
Minneapolis #	*135.00m*	*135.00m*	*140.00*	*140.00*	*140.00*	*140.00*	*185.00*	*185.00*	*185.00*			19.89	24.25
Montreal *b	87.00a	94.00a	87.00a	88.00a	104.00a	125.00a				122.00	122.00		
	165.00	*165.00*	*165.00*	*165.00*	*165.00*	*165.00*	*170.00*	*170.00*	*170.00*				
New Orleans †	87.00	87.00	90.00	91.00	90.00	97.00	121.50			151.00	151.00	18.72	22.80
†	*105.00*	*105.00*	*91.50*	*115.00*	*115.00*	*115.00*	*127.50*	*127.50*	*142.50*				
New York 2	121.00	118.00	129.00	131.00	131.00	135.00				250.00	260.00	25.92	31.60
	.....		*132.50*	*133.50*	*133.50*	*134.50*	*177.50*	*177.50*	*177.50*				
Philadelphia ‡		Range from 109/120				105/125	105/125			214/224	214/224	28.00	32.00
		Range from 110/140				*115/145*	*125/150*	*164.00*	*164.00*				
Pittsburgh 2	115.00	120.00	130.00	120.00	125.00	130.00	150.00			150.00	185.00	25.92	31.60
	135.00	*115.00*	*150.00*	*150.00*	*150.00*	*150.00*	*220.00*	*185.00*	*185.00*				
St. Louis #	119.00	121.00	129.00d	129.00d	129.00e	134.00e						18.72	22.80
	.....	.....	*135.00*	*135.00e*	*135.00e*	*139.00e*	*191.00e*	*191.00e*	*191.00*				
San Francisco *l	*92.00*	*92.00*	*94.00*	*94.00*	*94.00*	*94.00*	*100.00*	*125.00*	*125.00*			12.22	14.91
Seattle †	*67.00*	*73.00*	*75.00*	*75.00*	*75.00*	*75.00*	*85.00*	*95.00*	*95.00*				
Toronto *	92.50a	93.50a	91.75a	88.00a	93.00a	92.00a				92.00			
	108.00	*106.00*	*109.00*	*113.00*	*116.00*	*119.00*	*135.00*	*138.00*	*138.00*				

† F.o.b. mill. * F.o.b. city, CL, out of yard. ** F.o.b. city, CL, direct mill shipment. ‡ Deliv. to contr. CL. 1. Retail, LCL, at yard. ◦ Retail, LCL, deliv. 2. Deliv. truck lots. 3. asd., truckload lots, 5/6 Mfbm.

LUMBER: Bold Face Type, Southern Pine. Italics, Douglas Fir. •a Spruce. •b Federal tax exempt, add 9% mun. & prov. tax. •c 5M lots. •d 8, 10, & 12 ft. lengths. •e 8 to 16 ft. lengths. •f Hemlock •g No. 1 common. •j 8 ft. lengths. •k No. 3 common. •l Incl rail rate from North west mills to San Francisco are $11.50 to $15.00 per M ft. bm. From Northern Calif. mills $9.00 by rail, $9.50 by truck. All rates for surfaced stock. For rough, add $3.00 to above figures. •m Up to 16' •R revised

PLYWOOD (Plyform, oiled and edge sealed): Douglas fir, 4' x 8' panels, 5-ply sanded 2 sides, carload lots, delivered per 1000 sq. ft. surface. Seattle base price, Interior, moisture resistant, ⅜", $181.00; ¾", $201.00. Exterior, waterproof, ⅜" $185.00; ¾", $205.00. For other centers add rail freight increment from table on proper size. •a Lower rate by water shipment. •b 50,000 lbs. minimum. •c Truck lots.

GLASS, EXPLOSIVES, CHEMICALS

WINDOW GLASS

Discounts from jobbers list, Feb. 1, 1950a Single or Double Strength

	A quality	B quality
Atlanta	78%c	78%c
Baltimore	74%d	76%d
Birmingham	82%	82%
Boston	72–10%	72–10%
Chicago	72%	72%
Cincinnati	74%	74%
Cleveland	74–2–10%	74–2–10%
Dallas	76%	76%
Denver	74%	74%
Detroit	74–10–10%	74–10–10%
Kansas City	74–10–10%	74–10–10%
Los Angeles	70%	76%e
Minneapolis	71–10%	71–10%
Montreal	40–10–5%bc	40–10–5%
New Orleans	75%	76%
New York	79–10%	79–10%
Philadelphia	74–10%	75–10%
Pittsburgh	72%	72%
St. Louis	72–10–10%	72–10–10%
San Francisco	60%–25%	68%–25%
Seattle	67%	72%

Glass: •a Jobbers' list price per box, 14 x 20, ss, $42.75 for A quality, $37.50 for B quality; 14 x 20, ds, $30.00 for A quality, $52.75 for B quality. •b sales tax extra. •c 77% or single strength. •d Discount 6/15/52. •e 77% for double strength.

EXPLOSIVES

Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots*

Atlanta	$0.2615
Baltimore	.2615
Birmingham	.2465
Boston	.2615
Chicago	.2615
Cincinnati	.2615
Cleveland	.3015
Dallas	.2690
Denver	.2665
Detroit	.2615
Kansas City	.2665
Los Angeles	.2640
Minneapolis	.2665
Montreal	22.05h
New Orleans	.2665
New York	.45g
Philadelphia	.2615
Pittsburgh	.2615
St. Louis	.2665
San Francisco	.2615
Seattle	.2640

Price of 60% Ammonia Gelatin is $0.15 per lb. higher than 40% in U. S., $1.75 per 100 lbs. higher in Canada.

Explosives: * Cartridges of 1¼", 1½", 1¾", 2", 2¼", 2½", 3" diameters. Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. •g In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $20.00 per trip. •h F.o.b. Bellowell (near Montreal), per 100 lb. forcite, 40%. Forcite 60%, $23.80

40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)

	C/L 20,000 lb. net	Tons	200 lb. lots
E. of the Miss., except Fla and Me.	$0.2065	$0.2465	$0.2615
W. of Miss. to Rocky Mtn. States, Fla. and Maine	.2115	.2515	.2665
Rocky Mtn. States	.2115	.2515	.2665
Pacific N. W. States	.2090	.2490	.2640
Pacific S. W. States	.2065	.2465	.2615

PILES, TIES F. O. B.

PILES

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

Dimensions	Points	Length	By Rail Pine*	By Rail Fir
12-in. at butt	6-in.	30 to 50-ft.	$0.51	....
12-in.—2-ft. from butt	6-in.	50 to 59-ft.	.54	....
12-in.—2-ft. from butt	6-in.	60 to 69-ft.	.58	....
12-in.—2-ft. from butt	6-in.	90 to 100-ft.	.....	.....
13-in.—3-ft. from butt	5-in.	91 to 100-ft.	.....	.....
14-in.—2-ft. from butt	6-in.	50 to 69-ft.	.50/.68	.....
14-in.—2-ft. from butt	6-in.	70 to 79-ft.	.78/.88	.93
14-in.—2-ft. from butt	5-in.	80 to 85-ft.	.88/93	.94
14-in.—2-ft. from butt	5-in.	85 to 89-ft.	....	1.00
14-in.—2-ft. from butt	5-in.	90 to 100-ft.	....	1.02

* Pine piling over 80-ft. available only in limited quantities

RAILWAY TIES

Prices f.o.b. per tie box carload lots:

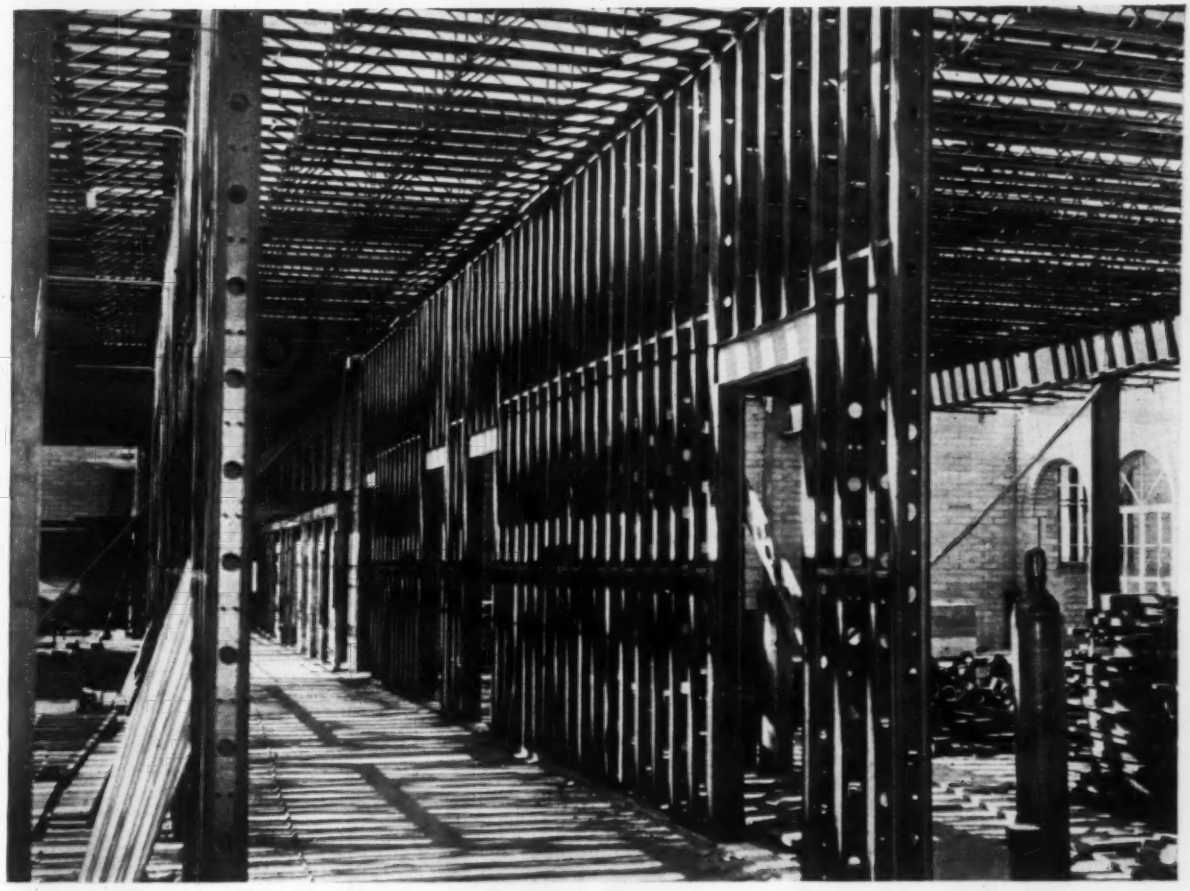
		6" x 8" x 8' Untr.	6" x 8" x 8' Tr.	7" x 8" x 8'6" Untr.	7" x 8" x 8'6" Tr.
Birmingham*	Hardwood, Grade 3	$1.70	$2.55	Gr. 5 $2.25	$3.33
	Grade 2	1.50	2.35	" 4 2.10	3.18
	Grade 1	1.15	2.00	" 3a 1.70	2.78
Chicago	Red Oak		3.80a		4.40a
New York	S. L. Sap Pine	2.00	4.00	3.00	6.00g
	Mixed Oak	2.50	4.50	3.50	6.50g
Philadelphia	Red Oak	2.85/4.05	4.40/4.60	3.20/3.40	4.40/4.60
St. Louis	Mixed Oak	2.65	3.40a	2.90b	3.75ab
San Francisco	Douglas Fir	2.12ef	3.10ef	2.99ef	4.32ca

Tr.—Treated; Untr.—Untreated. a Creosoted. c Empty cell. e Green f.o.b. cars. g 7 x 9 x 8'6" * Add 75c/tie freight charge to Birmingham. •h 7" x 9" x 9½"

CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

Bleaching powder in drums f.o.b. works, per 100 lb	$5.02
Chlorine cylinders, liquid, per lb. f.o.b. works	.11
Calcium chloride, 77–80%, flaked, 100-lb. paper bag, f.o.b. works, ton	31.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb	2.65
Soda ash, 58%, in paper bags, per 100 lb. dense	1.90
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works	2.05
Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works	21.20



LIGHTSTEEL cuts dead-weight loads in five-story seminary

Immaculate Heart Seminary, part of the multi-million dollar expansion program at San Diego University, is one of the largest concrete-block structures in the west. Of Spanish Renaissance architecture, the building contains 141,000 sq. ft. of floor space.

Stanley Burne, structural engineer for the job, says, "We used LIGHTSTEEL studs with metal lath and plaster, throughout the interior, with the object of securing lightness with strength, fireproofing, as well as freedom from deterioration and from dry rot. The open-work pattern of these studs, simplified installation of conduits, piping, etc., as well as the fibreglass insulation.

"In the stepped-back upper stories we also used LIGHTSTEEL studs for the exterior walls, to avoid excessive dead loads at these locations. Out here on the west coast, buildings must be designed to resist seismic forces, which are based upon a certain percentage of the dead weight of a structure. Hence unnecessary dead weight is an item that should be reduced where conditions permit. At the same time, walls are used as 'shear panels,' resisting lateral forces, and require shear values accordingly. It is relatively simple to install the necessary diagonal tension members in these steel studs, and get a high shear value.

"We are using this same construction in other major buildings at the university."

For full details of versatile LIGHTSTEEL — specifications, physical and structural properties and loading tables — send for 28-page catalog SS-24.

PENN METAL COMPANY, INC.

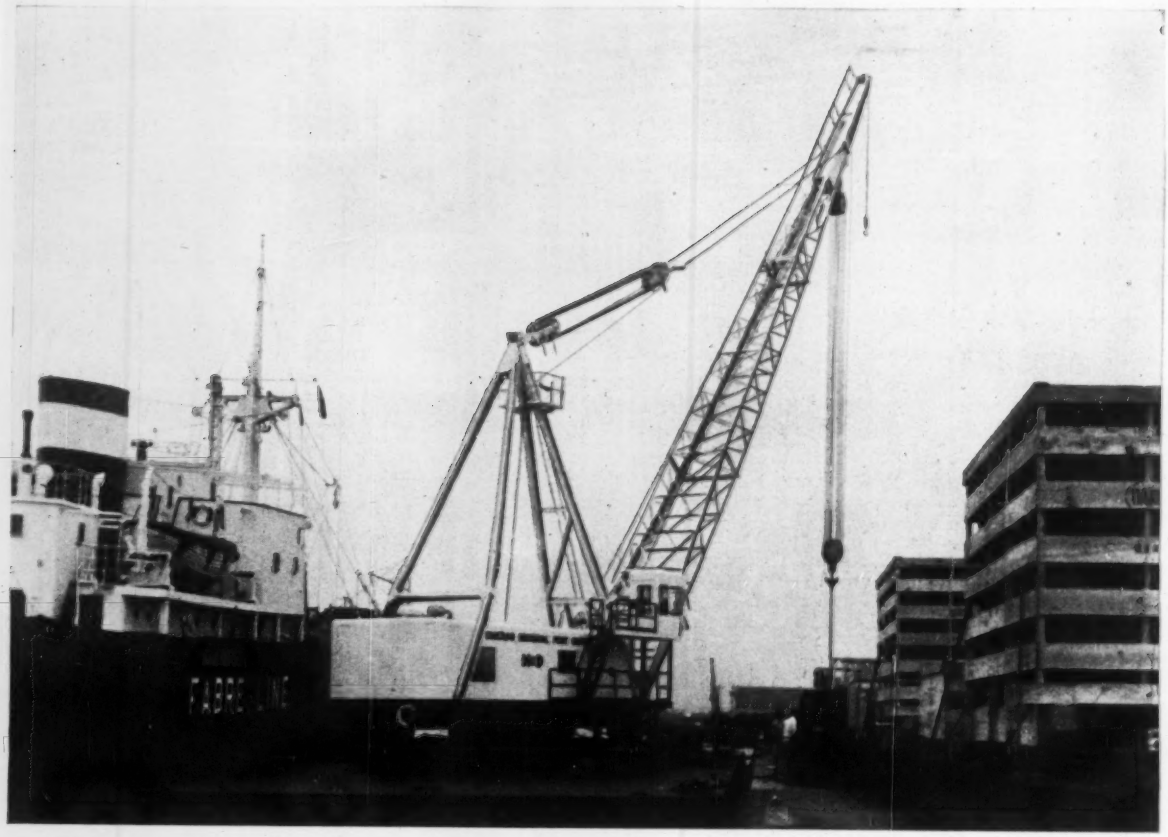
General Sales Office:
40 Central Street, Boston 9, Mass.
Plant: Parkersburg, W. Va.
District Sales Offices: Boston, New York, Philadelphia, Pittsburgh, Chicago, Detroit, St. Louis, Dallas, Little Rock, Seattle, San Francisco, Los Angeles, Parkersburg

PM-187

IMMACULATE HEART SEMINARY
Architect: Edgar V. Ullrich, A.I.A.
Structural Engineer: Stanley Burne
LIGHTSTEEL **Erector:** L. A. Lathing Co.
LIGHTSTEEL **Supplier:** Chambers Steel Co.
General Contractor: L. J. Ninteman Construction Co., Inc.

METAL MARK Penmetal 1869 OF QUALITY

a name to remember



Great Lakes' Largest . . .

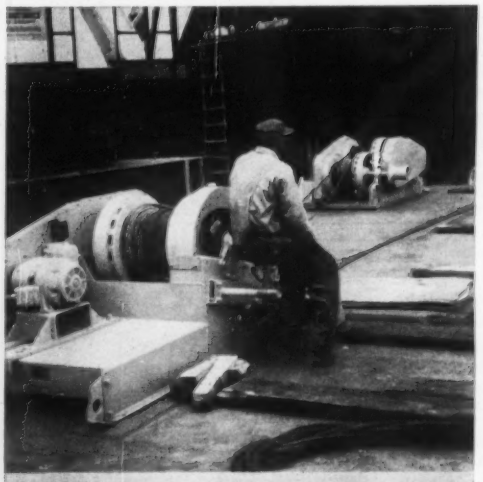
Clyde Whirley Handles 110 Ton Lifts For Chicago Regional Port District

Now boasting the most powerful crane on the Great Lakes, the newly developed Lake Calumet Harbor is well equipped to handle the heaviest cargoes shipped via the Great Lakes waterway.

Installed recently by the Chicago Regional Port District, this Whirley, another addition to Clyde's imposing list of port installations, has a load capacity of 110 tons at a 45 foot radius and 38 tons at 125 foot radius. The Whirley has a full-revolving 110 foot boom with 20 foot extension and is barge mounted to service the entire harbor. Two Clyde deck winches shift the barge along the dock or vessel as operations require.

Clyde Whirleys have long been acknowledged as cargo-handling workhorses of the world's leading ports. Operating with buckets, hooks or magnets, Whirleys have an unequalled reputation for reducing costly tie-up time for vessels and for fast, dependable, low-cost handling of any type cargo.

Write or phone our Marine Engineering Division for complete specifications on Clyde Whirleys, custom-engineered to best serve your particular needs.



Two Clyde electric hoists give the Chicago Regional Port District's Whirley 'run of the harbor'. Barge mounting saves dock space, always at a premium in busy ports.

CLYDE RIC REPUBLIC INDUSTRIAL CORPORATION

CLYDE IRON WORKS, Inc.

Established 1899

DULUTH 1, MINNESOTA

HOISTS : DERRICKS : WHIRLEYS : UNLOADERS
BUILDERS TOWERS : CAR PULLERS : ROLLERS

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, Reports
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BUILDINGS—BA

▲† **Mass., Falmouth** — AIRFIELD PAVEMENTS — BA 11/6—U. S. Eng., 150 Causeway St., Boston, Mass., airfield pavements (FY-59) Otis Air Force Base, ENG-19-016-59-34. $3,000,000. CD 10/3.

BUILDINGS—BA

Me., Kittery—HOSPITAL—BA 11/14—Tri-County Osteopathic Hospital, Inc., 133 Rogers Rd., hospital, off Rte. 1 and Maine Turnpike. $400,000. Plans deposit $50. Maurice E. Witmer, 3 Hillside Dr., Portsmouth, N. H., archt. CD 10/29.

BUILDINGS—SLC

▲ **Mass., South Hadley**—RESIDENCE—Mount Holyoke College, Bd. Trustees, South Hadley soon lets contract HHFA Mass. 19-CH-33(D) residence bldg., on campus. $1,000,000. CD 9/30.

HEAVY CONSTRUCTION—LB & CA

NEW HAMPSHIRE—Dpt. P. Wks. & Hys., Concord, Bids opened 10/2,

Cooke-Ross, Inc., 257 Main St., Torrington, Conn., LB $333,521. 2.738 mi. hot b. conc. roadway NH 10, Winchester, Cheshire Co. CD 9/23.

NEW HAMPSHIRE—Dpt. P. Wks. & Hys., Concord,

Peter Salvucci & Sons, Inc., 55 Pond St., Waltham, Mass. CA $524,370, hot b. conc. 1.027 mi. roadway Grantham, Sullivan Co. Bids Sept. 18, awarded Sept. 30, CD 9/23, under LB.

▲† **Savin Bros., Inc.**, 10 Village St., East Hartford, Conn. LB $3,517,768 est. $4,153,311, constr. Townshend Dam and Reservoir, West River, ENG-19-016-59-7, VERMONT. U. S. Eng., 150 Causeway St., Boston, Mass. Bids Oct. 9. CD 9/17

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Bids opened 10/7,

Mass.—**Henley-Lundgren Co.**, 193 Hartford Pike, Shrewsbury, Mass., LB $289,618, est. $368,259, hy. work, relocate section, Pembroke St., Rte. 27, FA Proj. SG 121(1), Kingston.

Mass.—**G. Rotundi & Sons, Inc.**, 2 Washington St., Melrose, Mass., LB $363,817, est. $404,440, wid'n. hy.-Auto Rte. 12o, Lyndeboro. CD 9/25.

Power Constr. Inc., 43 Joseliff St., Roslindale, Mass., LB $107,832, est. $100,000, sewer-water and drain work, LEXINGTON, MASS. Town, Bd. Selectmen, Town Hall, Lexington, Mass. Whitman & Howard, Inc., 89 Broad St., Boston, Mass., engr.

BUILDINGS—LB & CA

Brown Constr. Co., 22 Monument St., Portland, Me., CA $639,284, est. $800,000, HOSPITAL, BOO HBAY HARBOR, ME. St. Andrew's Hospital, 3 St. Andrew's Lane, Boothbay Harbor, Me. Bids Sept. 10. CD 9/17, under LB.

Walter L. Ritchie Co., 1 Salem St., Malden, Mass., LB $492,638, WAREHOUSE addn., Medford St., CHARLESTOWN, MASS. Merchants Terminal Co., 465 Medford St., Charlestown, Mass. Bids Oct. 8. CD 10/1.

Owner, c/o Doucette & DeSantis, 133 Washington St., Weymouth, Mass., Separate Contracts, $350,000, RESIDENTIAL DEVELOPMENT "Fairview", 25 houses, Rte. 37, HOLBROOK, MASS.

E. J. Pinney Co., Inc., 220 Dwight St., Springfield, Mass., CA $520,895, est. $500,000, Housing & Home Finance Agency Proj., Mass. 58-C-607-A8, ELEMENTARY SCHOOL, LUDLOW, MASS. Town, School Dpt., 53 Chestnut St., Ludlow, Mass. Bids Oct. 2. CD 10/8, under LB.

▲ **New England General Contg. Co.**, 341 State St., New Haven, Conn., LB $1,260,000 (8 bidders), Lincoln JUNIOR HIGH SCHOOL addn., alterations, MERIDEN, CONN. Town, Bd. Educ., 22 Liberty St., Meriden, Conn. Bids Oct. 9. CD 9/11.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

† **N. Y., Syracuse**—AIRPORT IMPRVS.—BA 11/6—U. S. Property & Fiscal Office, New York State Arsenal, 201 64th St., Brooklyn 20, misc. repairs to Hangar Bldg. 601, New York National Guard, Hancock Field, Inv. No. NG-30-192-59-11. CD 2/29/56.

BUILDINGS—BA

▲ **N. Y., New York**—PARKING GARAGE—BA 10/29—Dpt. P. Wks., Rm. 2200, Municipal Bldg., Zone 7, general constr., plumbing work, heating and ventilating work, electrical work and lighting fixtures of 8th Avenue Garage, 8th Ave., W. 53 to W. 54th Sts., Manhattan Boro. Plans deposit $40. CD 5/3.

HEAVY CONSTRUCTION—LB & CA

NEW YORK—State Dpt. P. Wks., State Office Bldg., Albany, bids opened Oct. 9.

N. Y.—**Rhodes Const. Co. Inc.**, 833 Front Ave. Salamanca, N. Y., LB $235,027, est. $285,000 (7 bidders) two span 146 ft. long bridges and approaches to carry Rte. 2322 over Conewango Creek near south Dayton 0.55 mi., Cattaraugus and Chautauqua Counties

N. Y.—**Matthew DeGroot**, 276 Creekside Dr. Tonawanda, N. Y. LB $222,252, est. $149,000 (4 bidders), constr. northwest and southwest quadrant ramps at Shortman Rd. Interchange on State Thruway near Ripley, 0.83 mi Chautauqua Co. CD 9/12.

▲ **NEW YORK**—State Dpt. P. Wks., State Office Bldg., Albany, bids opened Oct. 9,

N. Y.—**McIntosh Road Materials Co.** 4010 McIntosh Rd., Harrisburg, Pa., LB $245,600, est. $277,000 (4 bidders), 54 mi. concrete pavement on various state highways, Allegany, Chemung, Schuyler, Steuben, Tioga and Yates Counties;

N. Y.—**Triple Cities Const. Co.**, Binghamton, N. Y. LB $1,651,043, est. $2,510,000 (12 bidders), grading and structural work for future paving 2.57 mi. four-lane divided section Empire Stateway and 1.4 mi. access roads, east of Rte. 11 between Blakesley Rd. and Trim St. in vicinity of Corbettsville southeast of Binghamton just north of New York-Pennsylvania State Line, Broome Co.;

N. Y.—**Peckham Road Corp.**, 50 Haarlem Ave., White Plains, N. Y., LB $418,471, est. $432,000 (2 bidders), 2.69 mi. section Rtes. 22 and 55 starting south of Windale just north of Dover-Pawling town line and extending northward past Windale and along road to Webatuck (Rte. 55) for about 1 mi. Duchess Co.;

N. Y.—**L. I. Whipple, Inc.**, Richfield Springs, N. Y. LB $161,155, est. $166,000 (2 bidders), reconstr. two Rte. 28N sections north of Aiden Lair, 2,283 ft. stretch immediately north of Boreas River Crossing and 1,229 ft. section about 1 mi. farther to north, distance 0.67 mi. Essex Co.;

N. Y.—**E. G. DeLia & Sons Const. Corp.**, 38 Campion Rd., New Hartford, N. Y. LB $1,274,517, est. $1,688,000, reconstr. and relocation 5.23 mi. section Rte. 30 from existing county road Northville to Benson, north of Sacandaga River Bridge and extending northward along county road west side of river to county line to new location across West Stony Creek on new bridge to be built about 500 ft east of present structure and across to east side of Sacandaga River to another new bridge, will rejoin present Rte. 30 on east side of river about 3½ mi. north of Northville continuing 1 mi. to project's northern terminus about 6 mi. south of Wells, Fulton and Hamilton Counties;

N. Y.—**Louis Mayersohn Inc.**, 36 State St., Albany, N. Y. LB $549,186, est. $665,000 (3 bidders), 4.58 mi. section Rte. 95 starting at Rte. 37 intersection at Bradleys Corners east of Hogansburg and extending south eastward to Bombay, Franklin Co.;

N. Y.—**Max DeFiore & Sons, Inc.**, 1850 Culver Rd., Rochester 9, N. Y., LB $339,328, est. $391,000 (6 bidders) 1.68 mi. section of Beachan Rd. (county road), between Chili Rd. (Rte. 33A) and Scottsville Rd. (Rte. 383), Monroe Co.

N. Y.—**Hendrickson Bros., Inc.**, 63 N. Central Ave., Valley Stream, N. Y., LB $4,174,218, est. $6,130,000 (10 bidders) 2.33 mi. six-lane divided section Long Island Expressway and 5.3 mi. access and service roads between Guinea Woods Rd. and Post Rd. incl. grade separation structures at Red Ground Rd., Whetley Rd., Old Westbury Rd. and Post Rd. and connections to Guinea Woods Rd., Nassau Co.

N. Y.—**Hendrickson Bros., Inc.**, 63 N. Central Ave., Valley Stream, N. Y. LB $4,384,623, est. $6,005,000 (9 bidders) 2.2 mi. six-lane divided section Long Island Expressway and 5.08 mi. access and service roads, between Post Road and Jericho Turnpike, incl. grade separation structures at West Powell's Lane, Powell's Lane and Jericho Turnpike with connections to Jericho Turnpike, Nassau Co.

N. Y.—**The Taiarico Constr. Corp.**, 105 Fifth Ave., Herkimer, N. Y., LB $546,656, est. $688,000 (8 bidders) reconstr. 2.54 mi. section Cherry Valley Sprout Brook hy. (County Rd. 19), starting about 1,000 ft. north Rte. 20 and extending northeastward to Otsego-Montgomery county line, Otsego Co.

N. Y.—**R. A. Petta Constr. Co.**, Delanson, N. Y., LB $719,083, est. $892,000 (5 bidders) reconstr. 5.21 mi. section Rte. 67 starting at Ballston Ave. in Ballston Spa and extending westward to ¼ mi. east of Harmony Corners, Saratoga Co.

N. Y.—**Asphalt Stone Products, Inc.**, Box 1042, Schenectady, N. Y., LB $477,401, est. $648,000 (7 bidders) starting about 1/3 mi. south Rte. 146 intersection in Clifton Park and extending northward 2.24 mi.; existing three lane hy. will be widened so as to provide four traffic lanes separated by four-foot flush center, Saratoga Co.

N. Y.—**Hendrickson Bros., Inc.**, 63 N. Central Ave., Valley Stream, N. Y., LB $3,013,470, est. $3,644,000 (3 bidders) 1.94 mi. section Southern State Parkway and 1.32 mi. access and service roads from Broadway (Amityville) Rd. to point just west of Wellwood Ave.; completed hy. will have six concrete traffic lanes separated by center mall, Suffolk Co.

N. Y.—**The Callanan Road Imp. Co.**, South Bethlehem, N. Y., LB $249,327, est. $250,000, wid'n. and resurf. 1.44 mi. section Rte. 9W (East Chester St. extension) immediately north of Kingston city line, Ulster Co.

N. Y.—**E. R. Wolcott, Inc.**, Big Flats, N. Y., LB $588,261, est. $677,000 (7 bidders), reconstr. 5.31 mi. section County Rd. 138 starting at Wayne-Monroe county line just east of East Penfield and extending eastward to Walworth, Wayne Co. CD 9/12.

H. L. Gentry Constr. Co., Eckel Rd., Perrysburg, O., CA Est. $500,000, install 6½ mi. section 36 in. pipe line, incl. 1,000 ft. crossing of Hackensack River, NEW JERSEY. Transcontinental Gas Pipeline Corp., 744 Broad St., Newark, N. J. CD 9/19.

Tully & Dinapoli, Inc., 127-50 Northern Blvd., Flushing, N. Y., CA $892,472, relocation north and south marginal streets adjacent to George Washington Bridge Plaza, FORT LEE, N. J. Port of New York Auth., 111 8 Ave., New York 11, N. Y., CD 4/2/52.

▲ **PENNSYLVANIA**—Pa. Hy. Dpt., 506 North Office Bldg., Harrisburg,

L. M. Hutchison, R. D., Mount Union, Pa. CA $1,059,949, 22,130 ft. divided hy. crushed aggreg. base with bit. surf. 24 ft. wide each side divisor, 6 bridges. T. R. 545, College Twp., State College Boro, Centre Co. Bids Sept. 25. CD 9/30, under LB.

PENNSYLVANIA—Pa. Hy. Dpt., 506 North Office Bldg., Harrisburg,

Weaver Coal & Constr. Co., Inc., 543 Locust Valley Rd., Greensburg, Pa. CA $906,552, widen existing pavement to 22 ft. wide blacktop T. R. 780 from near New Kensington to Merwin Washington, U. Burrell and L. Burrell Twps., Westmoreland Co. Bids Sept. 12. CD 9/17, under LB.

▲† **American Dredging Co.**, 12 S. 12th St., Phila., Pa. LB $1,027,072, dredging, Delaware River opposite mouth of Poquessing Creek, Torresdale. Eng-36-109-59-3 PENNSYLVANIA. U. S. Eng., P.O. Box 8629, 2635 Abbottsford Rd. Phila., Pa. Bids Oct. 2. CD 9/18.

Alconn Utilities, Inc., 25 Cliff St., Vernona, N. Y., LB $596,750, Part A sewer lines ENOLA, PA. East Pennsboro Twp. Auth., 243 W. Columbia Rd., Enola, Pa. Bids Sept. 29. CD 9/3;
Carl E. Widell, N. Haddonfield Rd., Merchanville, 10, N. J., LB $346,780, Part B, treatment plant and pumping station (Enola, Pa.)

▲† **J. Kennon Perrin**, 5th and Carey St., Richmond, Va., LB $412,642 (20 bidders), Contr. 4, west approach sub-structure for Woodrow Wilson Memorial Bridge over Potomac River, Forest Heights, Prince George's Co., MARYLAND and VIRGINIA. Bureau P. Rds., Dpt. Commerce, 1440 Columbia Pike, Arlington, Va. Bids Oct. 9. CD 9/16;

(Continued on page 68)

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of Interest to American contractors.

By Regions & Classes of Construction
(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England	Middle West
Middle Atlantic	West of Mississippi
South	Far West

PROPOSED WORK

Water Supply	Public Buildings
Sewers, Waste Disposal	Mass Housing
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

One of the eight Mack four-wheel dumpers with 22½ ton capacity operated by Goodfellow Bros., Inc., of Wenatchee, Washington. The Macks have proved so valuable that Goodfellow Bros. have four more on order. These heavy-duty haulers are taking on a . . .

punishing road job in

Even in temperatures ranging from —15° to 110°, through mud, extreme dust, snow and ice, and on grades of up to 23%—Goodfellow Bros. know that their Macks will perform efficiently, dependably . . . and profitably.

Under such grueling operating conditions, their Mack dumpers showed their capability on the 3,000,000-yard Rocky Reach Dam earth-moving project on the Columbia River. Then they double-proved it on the Snoqualmie Pass highway construction in Washington's rough mountain country.

Besides providing maximum payloads at minimum hauling costs, the Macks are particularly well accepted by Goodfellow Bros. drivers and shop personnel because of their handling ease, short turning radius and easy accessibility for servicing.

Dumping rock on a road-widening operation on Highway #10 in Washington's Cascade Mountains. Prior to this road job, Goodfellow's 22½ ton Macks were used in the 3,000,000 yd. excavation and backfill for the Rocky Reach Dam near Wenatchee, Washington.

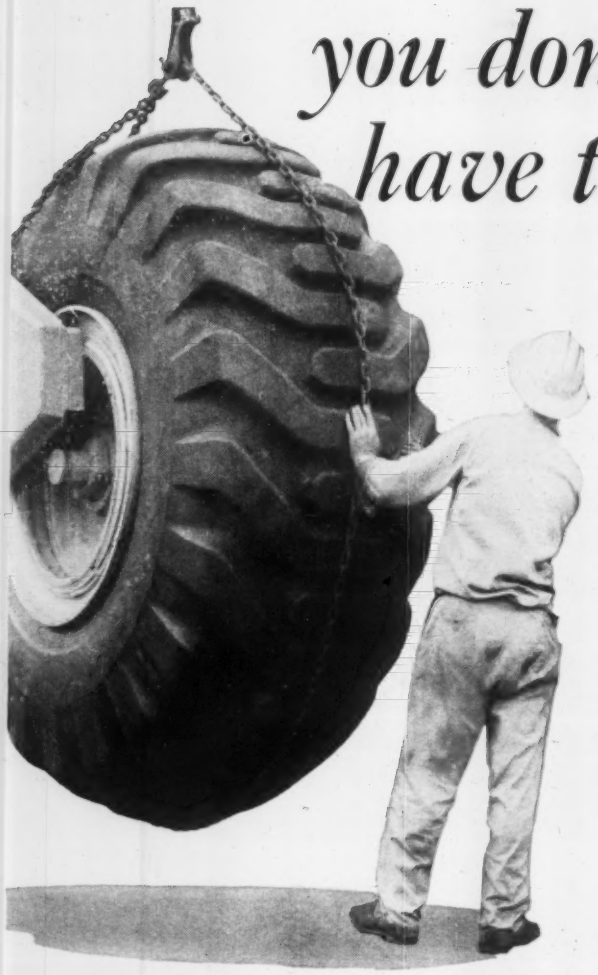
Snoqualmie Pass

There is a Mack tailored to your construction needs that will provide large-capacity payloads at minimum unit cost. Let your Mack representative show you on-the-job performance proof that—under today's conditions—you can't afford *not* to operate Macks! Mack Trucks, Inc., Plainfield, New Jersey. In Canada: Mack Trucks of Canada, Ltd.

MACK

first name for

TRUCKS



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The ability to coordinate equipment, skill and resources "builds" profitable performance records. It also takes specialized know-how and coordination to provide the bonds and insurance required by qualified contractors.

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The Fidelity and Casualty Company of New York

"Writing Bonds Since 1876"

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(Continued from page 65)

Ruckman & Hansen, Inc., 3617 North Clinton St., Ft. Wayne, Ind. and **Roy Ryan Sons Co., Inc.**, 5416 Boonville Hy., Evansville, Ind. (joint venture), LB $1,667,350, Contr. 5, east approach; LB $2,245,569 (6 bidders), combination bid on Contracts 4 and 5) (Maryland and Virginia);

Pittsburgh-DesMoines Steel Co., Neville Island, Pittsburgh 25, Pa., LB $2,375,760 (9 bidders) Contr 6, west and east approach super-structure steel for Woodrow Wilson Memorial Bridge. (Maryland and Virginia):

BUILDINGS—LB & CA

▲ **Fischer-Malik, Inc.**, 11 Moffit Blvd., Bay Shore, N. Y., CA Est. $3,000,000, SERVICE CENTER, on 25-acre tract to incl. office bldg., garage, warehouse, storage area and parking, BRENTWOOD, N. Y. Long Island Lighting Co., 240 Old Country Rd., Mineola, N. Y. Francisco & Jacobus, 342 Post Ave., Westbury, N. Y., archts.

Mars Associates & Normel Constr. Co., 271 Church St., New York 13, N. Y., CA $970,000, general constr. Riverside HEALTH CENTER and Bloomingdale Branch LIBRARY, Manhattan Boro, NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids Sept. 10. CD 9/22, under LB.

Baton Constr. Corp., 1717 Sansom St., Phila., Pa., CA $344,000, ENGINEERING BLDG., MOORESTOWN, N. J., Radio Corporation of America, Front and Cooper Sts., Camden, N. J. Burns & Roe, 160 Broadway, New York, N. Y., archts. CD 1/20/55.

Paul Waldinger, 228 Lakeview Terrace, Teaneck, N. J., Own Forces, $425,000, 20 HOUSES, second section, Rock Rd., PARK RIDGE, N. J., C. J. Kordys, 116 Passaic St., Passaic, N. J., archt.

▲ **Louis M. Bleznak & Sons, Inc.**, 814 N. Broad St., Woodbury, N. J., Owner Builds, $13,000,000, three 14 story APARTMENT BLDGS., plus group of 15 stores on separate sections of 23-acre tract, PENNSAUKEN, N. J., John Hans Graham & Assocs., 200 K St. N. W., Wash., D. C., and Faint & D'Anastasio, 5521 Westfield Ave., Pennsauken, N. J., archts. Constr. early in 1959, occupancy in 1960.

Joseph Constr. Co., c/o Irwin Siapow, 135 S. 17th St., Phila., Pa. Separate Contracts. $400,000. RESIDENTIAL DEVELOPMENT, Jenkintown Rd., etc., JENKINTOWN, PA.

▲ **Baltimore Contractors Inc.**, 711 South Central Ave., Baltimore, Md., LB $1,813,000 (9 bidders), Douglass JUNIOR-SENIOR HIGH SCHOOL, Croom Rd., Upper Marlboro, MARLBORO, MD. Prince George's County Bd. Educ., Marlboro, Md. Bids Oct. 9. CD 9/17.

Banks & Lee Inc., Tower Bldg., Wash., D. C., CA Est. $700,000, 94 units, Trenton APARTMENTS, Mississippi Ave. and 6th Sts. S.E., WASH., D. C. Mississippi Ave. Housing Corp. c/o Edwin Weihe, archt., 927 15 St., N.W., Wash., D. C.

▲ **J. D. Hedin Constr. Co.**, 2900 Newton St. N. E., Wash., D. C. CA $2,997,000 constr. Frank W. Ballou HIGH SCHOOL, 4th St. between Mississippi Ave. and Savannah St. S. E., WASH., D. C. D. C. Govt., Dpt. Bldgs. & Grounds, 499 Penna Ave. N. W., Wash., D. C. Bids Sept. 24, CD 9/25, under LB.

SOUTH

HEAVY CONSTRUCTION—BA

† **Louisiana**—BA 11/5—U. S. Eng., foot of Prytania St., New Orleans, Normand Levee setback to contain 80,000 cu. yd. on Red River, Avoyelles Parish, Inv. No. 59-86, Item R-74.5-R. CD 4/22/44, under Illinois-Louisiana.

BUILDINGS—BA

Miss., **Meridian**—SCHOOL—BA 11/4—Lauderdale Co. Bd. Educ., Court House, 85,000 sq. ft. brick, concrete, etc. school. $600,000. Bill Archer, 203 Kidder Bldg., archt. CD 6/13.

▲ **Tenn., Dyersburg**—HOUSING—BA 11/4—Dyersburg Housing Auth., two low rent public housing Projs. $1,500,000.

▲ **Ga., Atlanta**—FOOD CENTER—BA 11/13—Emory University, Emory University, Ga., food center bldg., Emory University. $1,000,000. Plans deposit $75. Robert & Co. Assocs., 96 Poplar St. N.W., archts. and engrs. CD 9/13/56.

BUILDINGS—SLC

Ky., **Louisville**—NURSING SCHOOL—Kentucky Baptist Hospital, 810 Barrett Ave., Zone 4, soon lets contract, 4 story, 108x245 ft., brick, rein.-con. School of Nursing. Over $600,000. Jas. H. Kolbrook, Starks Bldg., Zone 2, archt. E. R. Ronald & Assoc., 554 S. 3rd St., Zone 2, engrs.

HEAVY CONSTRUCTION—LB & CA

† **Better Builders, Inc.**, 8475 Chesapeake Blvd., Norfolk, Va., CA $445,420, AC & W HOUSING, Fort Fisher Air Force Base, Inv. 30-603-58-104, FORT FISHER, N. C. U. S. Govt. Air Force, E. J. Mulholland, Contracting Officer, Stewart Air Force Base, Newburgh, N. Y.

† **Gregg-Gibson & Gregg**, Box 502, Leesburg, Fla., LB $274,289, earthwork and spillways at Okefenokee National Wildlife Refuge, SRW-4-311, WAYCROSS, GA U. S. Dpt. Interior, Fish & Wildlife Div., 50 7th St. N. E., Atlanta, Ga. Bids Oct. 3.

▲ **FLORIDA**—State Rd. Dpt., Tallahassee,

Troup Bros., Inc., Box 168, Miami 33, Fla., CA $3,079,096, limerock base, b. conc. surf. course, with binder course limerock base surf. treat. shoulders, constr. 4 concrete slab deck prestressed beam rye bridges 1,157 ft. on prestressed concrete piling, aluminum handrail, sheet pile bulkhead, fencing, roadway lighting, small drainage structures, etc. 0.722 mi. FAI Proj. No. IA-95-1 (7) 8, Job No. 87090-3403 SR 25, Dade Co. Bids Aug. 26, awarded Oct. 3. CD 8/29, under LB.

Richardson Constr. Co., 645 N. W. 7th Ave., Fort Lauderdale, Fla., LB $792,627, water treatment plant addn., FORT LAUDERDALE, FLA. City, City Hall, Fort Lauderdale, Fla. Bids Sept. 29. CD 8/20.

† Algernon Blair Constr. Co., 1st National Bank Bldg., Montgomery, Ala. CA $419,409. service club and utilities and alterations to existing wash rack plant at Stewart Air Force Base, ENG-40-058-59-5, SMYRNA, TENN. U. S. Eng., 306 Federal Office Bldg., Nashville, Tenn. Bids Sept. 17. CD 8/15.

▲† Blount Bros. Constr. Co., 79 Commerce St., Montgomery, Ala. LB $1,797,395, est. 2,746,823. constr. 2nd plenum evacuation sys. for the propulsion wind tunnel at Arnold Engineering Development Center this will suck out shock waves to achive a true picture of Windflow around the test object, TULLAHOMA, TENN. U. S. Eng., Tullahoma, Tenn. Bids Oct. 8. CD 10/1.

BUILDINGS—LB & CA

▲† Roscoe-Ajax Constr. Co. & Assocs., 1107-19th St. N.W., Wash., D. C. CA $2,289,000, excavation and foundation work, Central Intelligence Agency HEADQUARTER BUILDING, LANGLEY, VA. General Services Admin., 19th and F Sts. N.W., Wash., D. C. Bids Sept. 9. CD 9/12, under LB.

Wm. S. James Constr. Co., Box 1351, Texarkana, Tex., CA $988,838, Woodlawn HIGH SCHOOL addn., alterations, East Baton Rouge Parish, BATON ROUGE, LA. East Baton Rouge Parish, School Bd., 809 St. Louis Ave., Baton Rouge, La. CD 10/2, under LB.

Hartz-Kirkpatrick Co., 25th and Frederica Sts., Owensboro, Ky., LB $640,315, (5 bidders), HOSPITAL addn., HOPKINSVILLE, KY. Jennie Stuart Memorial Hospital, 321 W. 17th St., Hopkinsville, Ky. Bids Oct. 2. CD 9/25.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

▲ O., Mingo Junction—BA 10/31—Village, P. O. Box 98, sewage treatment plant, Contr. II, $1,124,000. Plans deposit $35. Alden E. Stilson & Assoc., 245 N. High St., Columbus, engrs. CD 12/9.

BUILDINGS—BA

▲ Wis., Silver Lake—COLLEGE—BA About 11/6—Holy Family College, college bldg. $2,000,000. E. Brielmaier & Sons, 735 N. Water St., Milwaukee 3, archts. CD 11/9/55.

Wis., Wisconsin Rapids—STATE OFFICE—BA 11/6—State Bldg. Comn., 2 story, bsmnt., 61 x 244 ft. state office bldg. $755,000. Plans deposit $50. R. D. Culbertson, state engr. R. C. Kirckhoff, state archt. CD 8/15/57.

Wis., Burlington — SCHOOL — BA 11/18 — Bd. Educ., Burlington, high school addn. $750,000. Plans deposit $50. E. A. Stubenrauch & Assocs., Inc., 712 Erie Ave., Sheboygan, archt. CD 3/28.

HEAVY CONSTRUCTION—LB & CA

▲ OHIO—Dpt. Hys., Columbus,

O.—C. E. Edgington & Son, 913 S. Main St., Findlay, O. CA $603,281, est. $705,800, Type T-35 on B-119 and structures 1.987 mi. SR 39 and 99-2.90-2.37, S-SG-501 (7) S-SG-1266 (1), Village of Perrysville, Ashland Co.;

O.—The Horvitz Co., 4375 E. 146 St., Cleveland, O. CA $547,556, est. $721,400, Type T-35 8.698 mi. SR 10-(0.00-8.64) DR-308 (3). Cities of North Olmsted and Fairview Park, Cuyahoga Co.;

O.—Foley Constr. Co., 5050 Orchard St., Cincinnati, O. CA $1,048,427, est. $1,216,000. Type T-71 and structures 0.758 mi. USR 50-(29.83-30.33) U-582 (11) Village of Fairfax, Hamilton Co.;

O.—C. F. Replogle Co., 122½ N. Court St., Circleville, O. CA $2,974,183, est. $3,207,500. Type T-71 and structures 6.679 mi. USR 35-0.00 (34.38-35.11) F-606 (9), Jackson and Ross Counties. Grand total $5,173,427. CD 10/9, under LB.

▲ Wm. Passalcqua Builder, Inc., 16828 Kinsman Rd., Cleveland 20, O. CA $1,607,000, est. $1,500,000. Lakefront Terminal Project, CLEVELAND, O. City of Cleveland, Dpt. Port Control, Wm. J. Rogers, dir., City Hall, Cleveland 14, O. Awarded Oct. 8. CD 10/8, under LB.

▲ T. F. Cloghessy, Inc., 4914 Calumet Ave., Hammond, Ind., LB $373,831, Div. C. Sec. 4, force mains, incl. 3,420 ft., 72 in. concrete pipe force mains, 260 ft. mains in tunnel, 2,560 8- to 18-in. vitr. sewer pipe; LB $468,362, Div. C, Sec. 3, storm sewers, incl., 7,600 ft. 24- to 60-in. concrete pipe, 1,650 ft., 12- to 18-in. vitr. clay pipe; LB $857,802, Div. C, Sec. 2, storm sewers, 11,600 ft. 24- to 84-in. concrete pipe, 1,650 ft., 8- to 18-in. vitr. clay pipe, EAST CHICAGO, IND. Bd. Sanitary Comn., 5200 Indianapolis Blvd., East Chicago, Ind. Bids Oct. 7. CD 9/19;
Samocki Constr. Co., 3580 Pennsylvania Ave., East Chicago, Ind., LB $1,415,589, storm sewer and force mains, incl., Div. C, Sec. 5, 22,000 ft., 24- to 72-in. concrete pipe, restore 6,100 ft. 96- to 72-in. existing pipe; LB $144,589, Div. C, Sec. 1, install 48- to 36-in. concrete pipe, 240 ft., vitr. 2,100 ft. force mains from new Michigan Ave. pump station (East Chicago, Ind.);
Roy C. Clark, Inc., 804 E. Chicago Ave., East Chicago, Ind., LB $854,705, Div. B, constr. 2 storm water pump stations, new tray screens, storm water pump; LB $964,261, Div. A, sewage treatment plant addns., 3 sludge digesters, air blower, remodeling, administration and control bldgs., (East Chicago, Ind.).

ILLINOIS—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield, Bids opened 10/8,

Ill.—Calhoun County Constr. Co., P. O. Box 201, Springfield, Ill., LB $185,350 (1 bidder) install pipe culverts on Ill. 157 and bypass U. S. 50, Monroe Co.;

Ill.—Hollembeak Constr. Co., 726 S. 22 St., Quincy, Ill. LB $121,999 (9 bidders) 2 deck girder bridges over Hadley Creek north of Barry FAS 596, Pike Co. CD 9/22.

▲ ILLINOIS—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield, Bids opened 10/8,

Ill.—Bituminous Fuel & Oil, 304 Illinois Ave., East St. Louis, Ill. LB $471,214, (2 bidders), surf. course 4.42 mi. FAS 841 from Millstadt, southeasterly, St. Clair Co.; LB $259,676, (2 bidders), surf. course 3.50 mi. FAS 831 from Ashley, southerly, Washington Co.; LB $109,755, (4 bidders), surf. 5.90 mi. FAS 746 from US 67 north of Medora, westerly, Jersey Co.;

Ill.—Caldwell Engr. Co., 803 W. College St., Jacksonville, Ill. LB $177,982, (2 bidders), paving 0.67 mi. in Jacksonville and steel beam bridge, FAS 612, Morgan Co.;

Ill.—Central Eng. Co., P. O. Box 838, Davenport, Iowa. LB $463,112, c. con. pavement 2.98 mi. Carbon Cliff south on FAS 205, Rock Island Co.;

Ill.—Diamond Constr. Co., Quincy, Ill. LB $146,571, (2 bidders), base course 6.95 mi. from Barry to Baylis on FAS 598, Pike Co.;

Ill.—Gilmore Asphalt, Anna, Ill. LB $592,786, (1 bidder), resurf. and wid'n., Ill. 3 and 146 from Jct. to Cape Girardeau north, Alexander and Union Counties;

Ill.—Kelley Bros. Constr. Co., 4211 State St., East St. Louis, Ill. LB $211,991, (3 bidders), wid'n., resurf. 1.79 mi. on eastbound lane US 50 between Ill. 157 and 111 at East St. Louis, St. Clair Co.;

Ill.—I. D. Lain Co., 1901 East Adams St., Springfield, Ill., LB $293,947, (5 bidders), widn. and base course on SB 1-100 NW of Jacksonville, Morgan Co.;

Ill.—Litchfield Bituminous Corp., Hillsboro, Ill., LB $131,158, surf. 2 mi. from Farmersville west on FAS 732, Montgomery Co.;

Ill.—McCann Co., Inc., P.O. Box 201, Springfield, Ill., LB $1,123,419, (2 bidders), surf. 3.29 mi. from Wood River, NE, on FAS 762, Madison Co.;

Ill.—Rein & Dahl, Inc., Stoughton, Wis., LB $223,159, (4 bidders), surf. 5.35 mi. FAS 80 south of Derinda Center, Jo Daviess Co.;

Ill.—Triangle Constr. Co., 480 North Evergreen St., Kanakee, Ill., LB $484,333, (1 bidder), bit. surf. course and bridge over Pierce Creek 6.01 mi. on FAS 826, Jefferson Co. CD 9/23.

▲ Mike Pontarelli, Inc., 4248 N. Kilpatrick Ave., Chicago, Ill., LB $1,551,001, auxiliary outlet storm sewers, Pratt Ave., Contr. 2-B; 48 in. rein.-con. and concrete sewers CHICAGO, ILL. Dpt. Purchases, City of Chicago, City Hall, Chicago, Ill. B. C. Eilers, ch., 320 N. Clark St., Chicago, Ill., ch. engr. Bids Oct. 3.

BUILDINGS—LB & CA

F. X. Minnigan, Inc., 14 Bates St., Dayton, O., LB $904,900 (10 bidders) general contract JUVENILE CENTER, DAYTON, O. Comrs. Montgomery Co. Court House, Dayton, O. Bids Oct. 9. CD 9/5.

Albert M. Higley Co., 2036 E. 22 St., Cleveland 15, O., CA Est. $800,000 (11 bidders) LAMP WIRE AND PHOSPHORS PLANT, EUCLID, O. General Electric Co., 1 River Rd., Schenectady, N. Y. Osborne Engineering Co., 7016 Euclid Ave., Cleveland 3, O., engr.

▲ Melbourne Bros. Constr. Co., 5520 Cleveland Ave. N.W., Canton, O. LB $2,050,410, general contract MUSIC-SPEECH CENTER, Kent State University, KENT, O. Ohio Dpt. P. Wks., State Dpts. Bldg., Columbus, O. Bids Oct. 9. CD 9/9;
Spohn Heating & Ventilating Co., 955 Home Ave., Akron, O. LB $420,800, heating and ventilating contract Music-Speech Center Kent State University (Kent, O.).

T. J. Hume Co., 435 Hamilton Ave., Lorain, O., LB Est. $500,000, 1 story, 60,000 sq. ft. brick, steel FACTORY, LORAIN, O. Lorain Products Corp., 1122 F St., Lorain, O. L. J. Goodell, c/o owner, engr.

▲ West Park Home Builders, 5194 West Park, Cleveland 26, O. Own Forces, $2,000,000. 70 HOMES, West Park Estates, NORTH OLMSTED, O.

▲ Darin & Armstrong, corner 14 St., Detroit, Mich., CA general contract 7 story, 113 x 113 ft., rein.-con., steel DIAL EXCHANGE BLDG. connected with present bldg. at two story level, 130 Erie St., TOLEDO, O. Total est. $2,900,000. Ohio Bell Telephone Co., 113 Huron St., Toledo, O. Awarded Oct. 3. CD 8/18;
Johnson Plumbing & Heating, 2740 Nebraska St., Toledo, O., CA mechanical contract dial exchange bldg. Toledo, O.);
Taylor Electric Co., 2604 Tremainesville St., Toledo, O., CA electric contract dial exchange bldg. (Toledo, O.);
Otis Elevator Co., 1609 Canton St., Toledo, O., CA elevator contract dial exchange bldg. (Toledo, O.).

Roediger Constr. Co., 1729 Superior Ave., Cleveland 14, O., CA Est. $500,000, 42,000 sq. ft. LABORATORY expansion, WICKLIFFE, O. Lubrizol Corp., 29400 Lakeland Blvd., Wickliffe, O. Small, Smith, Reeb & Draz, 1010 Euclid Ave., Cleveland 15, O., archts. Awarded Oct. 7.

The Nespeda Constr. Co., 42 Wadsworth St., Youngstown, O., CA $668,919, general contract Volney Rogers JUNIOR HIGH SCHOOL, off S. Schenley Ave., YOUNGSTOWN, O. Bd. Educ., 20 W. Wood St., Youngstown, O. Bids Oct. 2, awarded Oct. 6. CD 9/9.

Fred C. Rowley & Sons, Inc., 4732 Calumet Ave., Hammond, Ind., CA $250,000, 2 story, bsmnt. ENGINEERING BLDG., GARY, IND. U. S. Steel Corp., 525 Wm. Penn Place, Pittsburgh, Pa. Beine, Hall & Curran, 607 Broadway, Gary, Ind., archts. CD 3/19/56.

R. T. Milord Co., 9825 S. Crawford Ave., Evergreen Park, Ill., CA $670,410, 3 story, part bsmnt. RESIDENCE HALL, 103 and Central Park Ave., CHICAGO, ILL. St. Xavier College, 103 and Central Park Ave., Chicago, Ill. CD 8/20, under LB.

▲ Surety Builders, 323 N. York St., Elmhurst, Ill. Owner Builds. $1,425,000, 75 HOMES, Bonnie Park, MT. PROSPECT, ILL. Bob Brandt, 328 N. York, Elmhurst, Ill., archt.

▲ A. Alfini & N. Rizzo, 815 Devon Pl., Park Ridge, Ill. Owner Builds. $3,000,000, SHOPPING CENTER, incl. 102,316 sq. ft. shopping area, 30,000 sq. ft. medical office and bit. paved parking lot for 654 cars, PARK RIDGE, ILL. Irving M. Karlin Assoc., 203 N. Wabash Ave., Chicago, Ill., archts.

Peter W. Petersen Co., Inc., 176 Stripe Court, Waukegan, Ill., CA $750,000, 8 unit SHOPPING CENTER, incl. parking area, 2650 Sheridan Rd., SION, ILL. Kilbane Bros., Inc., 131 Genesee St., Waukegan, Ill. CD 2/1/55.

Abbott Constr. Co., 5789 N. Lincoln Ave., Chicago, Ill., CA $553,333, 1 story, 33,000 sq. ft. brick LIBRARY, north of Village Hall on Oaktoe St., SKOKIE, ILL. Skokie Public Library, 4913 Oakton St., Skokie, Ill. CD 9/24, under LB.

▲ Jim Imhoff Constr. Co., Hy. 30, Madison, Wis., LB $1,098,800 (6 bidders), general contract NURSERY BLDG., MADISON, WIS. State Dpt. P. Welfare, Madison, Wis. Bids Oct. 7. CD 9/5.

Hamann Constr. Co., Manitowoc, Wis., CA $594,479, general constr. 3 story, bsmnt. and remodeling 4 story, bsmnt., St. Francis HOSPITAL, ESCANABA, MICH. Sisters of Third Order of St. Francis, Escanaba, Mich. Bids Oct. 1. CD 10/8, under LB.

WEST OF MISSISSIPPI

BUILDINGS—BA

Mo., Rolla—APARTMENTS—BA 11/5—Curators of University of Missouri, 116 Jesse Hall, Columbia, Mo., four married student apartment dormitory bldgs. containing 48 apartments on Campus of University of Missouri School of Mines & Metallurgy. Helimuth, Obata & Kassabaum, Inc., 315 N. 10th St., St. Louis 1, Mo., archts. Bids June 4 rejected, LB $345,000. CD 6/11, under LB.

Tex., Fort Worth—SCHOOL—BA 11/5—Fort Worth Pub. Schools, 3210 W. Lancaster, 1 story masonry Strickland Rd. Elem. School. $370,000. Plans deposit $25. Wilson, Patterson & Assocs., 601 Bailey St., archts. CD 3/4.

† Tex., Bay City—ARMY RESERVE TRAINING CENTER—BA About 11/14—U. S. Eng., Box 1229, Galveston, U. S. Army Reserve Center, ENG-41-243-59-8.

▲ Minn., Minneapolis—CENTRAL LIBRARY—BA 11/14—City, Purchasing Agt., 301 City Hall, 4 story, 164 x 254 ft. central library with 69 x 159 ft. penthouse, 1 story section 148 x 159 ft., base, sub-base, etc., between Hennepin and Nicollet Aves. and Third and Fourth Sts. $6,300,000. Plans deposit $75. Lang & Raugland, 802 Wesley Temple Bldg. and McEnary & Krafft, 930 Bldg., both Minneapolis, Minn., archts. CD 7/8/48.

Wyo., Lander—HOSPITAL—BA 11/15—Bd. Trustees Fremont Co., Memorial Hospital, Riverton, 44-bed County hospital, Bishop Randall Hospital. $550,000. Robert Wehrli, 109 E. 2 St., Casper, archt. CD 10/9.

† Tex., El Paso—LABORATORY, etc.—BA About 11/18—U. S. Eng., Box 1538, Albuquerque, N. M., laboratory and shop bldgs., Fort Bliss, ENG-29-005-59-21. CD 9/8.

HEAVY CONSTRUCTION—LB & CA

▲ MINNESOTA—State Hy. Dpt., 1246 University Ave., St. Paul,

W. Hodgman & Sons, Inc. and Alley Constr. Co., Inc., Box 387, Faribault, Minn. (joint venture), CA $1,123,660 grav. base, road-mixed bit. base, surf. 8 mi. incl. bridges, CD 10/10, under LB; CA $831,898, grade, grav. base, bit. base, plant mixed bit. surf., 601,124 cu. yd. excav., 76,353 tons grav. base and bridges Nos. 9115 and 9116, CD 10/1, under LB, both in Washington Co. Bids Sept. 19.

▲ MINNESOTA—State Hy. Dpt., 1246 University Ave., St. Paul,

Ashbach Constr. Co., 1910 West County Rd. C, St. Paul, Minn., CA $4,224,376, grade, surf. 2.9 mi. incl. 1,906,110 cu. yd. Class A. excav., 99,328 sq. yd. concrete paving; Bridges Nos. 6511, 6512, 6514, 9117, 9118, 9119 and 9120, 6509 and 6510 and 6579, Ramsey Co. Bids Aug. 22. CD 8/27, under LB.

▲ Foley Bros., Inc., New York Bldg., St. Paul, Minn., LB $3,672,670 (11 bidders) (Base Bid with runway omitted), general constr. main structure and elevated roadway of Administration-Terminal Bldg. at Wold-Chamberlain Field, MINNEAPOLIS, MINN. Minneapolis-St. Paul Metropolitan Airports Comn., 2429 University Ave., St. Paul, Minn. Bids Oct. 9. CD 8/25;
Holm Bros., Atwater, Minn., LB $496,480 (11 bidders) Base Bid, mechanical work on Administration-Terminal Bldg. at Wold-Chamberlain Field (Minneapolis, Minn.).

NORTH DAKOTA—State Hy. Dpt., Bismarck,

Archie Campbell, Inc., New Rockford, N. D., Frank E. Olson, WiNiston, N. D. and John J. Mayo, d/b/a Joe Mayo & Son, Cavalier, N. D., CA $544,800, tr. serv. gravel 6.923 mi. US 85 north of Grassy Butte, F-350(9) McKenzie Co. CD 10/1, under LB.

▲ OKLAHOMA—State Hy. Dpt. Capitol 5, Oklahoma City,

Okla.—Admiral Paving Co., 5501 E. Admiral St., Tulsa, Okla., CA $476,666 est. $523,159 (11 bidders) four bridges, two overpasses and two underpasses on I-40 near Hydro, Caddo Co.;

Okla.—E. E. Barber, 722 Wheeler St., Fort Smith, Ark. CA $533,573 est. $630,606 (11 bidders) concrete and steel bridge over N. Canadian River on Agnew St. Oklahoma City, Oklahoma Co.;

Okla.—Jack Durett, Keota, Okla., CA $97,116 est. $113,224 (9 bidders) two concrete and steel bridges U. S. 281 north of Gracemont, Caddo Co.;

Okla.—**Gregg Constr. Co.**, Henryetta, Okla., CA **$237,450** est. $252,990 (8 bidders) five concrete and steel bridges Hy. 22 near Kenefick, Johnston Co.;

Okla.—**W. W. Hodges**, 1633 N. Eastern St., Oklahoma City, Okla., CA **$132,495** est. $132,682 (2 bidders) bridge over Washita River on County road near Alex, Grady Co.;

Okla.—**Frank Newell & Sons**, Box 947, Muskogee, Okla., CA **$104,982** est. $112,779 (3 bidders) two concrete and steel bridges county road at Turley, Tulsa Co.;

Okla.—**J. A. Raines**, 2311 Callahan St., Muskogee, Okla., CA **$168,079** est. $177,440 (4 bidders) four bridges and one overpass U. S. 64 near Vian, Sequoyah Co.;

Okla.—**Tri State Constr. Co.**, 101 S. W. 11 St., Oklahoma City, Okla., CA **$85,752**, est. $95,361 (5 bidders) concrete, steel bridge Hy. 50 north of Mooreland, Woodward Co. Grand total $1,836,113. Bids Oct. 7. CD 9/24.

▲ **OKLAHOMA**—State Hy., Dpt., Capitol 5, Oklahoma City,

Okla.—**Amis Constr. Co.**, 1647 Exchange St., Oklahoma City, Okla. CA **$122,538**, est. $129,493 (5 bidders) grade and drain 3.324 mi. Hy. 50 north of Mooreland; CA **$369,311**, est. $398,213 (3 bidders) grade and drain Hy. 50 north of Mooreland to the Alabaster Caverns, Woodward Co.;

Okla.—**Imperial Paving Co.**, 700 E. Grand St., Oklahoma City, Okla. CA **$82,451**, est. $94,925 (3 bidders) grade and drain, stab. aggreg. base and b. conc. surf. 0.411 mi. Agnew Ave. at N. Canadan River bridge, Oklahoma Co.; CA **$404,139**, est. $426,115 (7 bidders) grade, drain, p.c. conc. wid'n. and b. conc. surf. 2.153 mi. U. S. 69 south of Atoka, Atoka Co.;

Okla.—**Merritt-McKnight Co., Box 134, McAlester St.**, Oklahoma City, Okla. CA **$160,868**, est. $174,058 (2 bidders) grade and drain 5.817 mi. Hy. 2 west of Caddo, Bryan Co.; CA **$169,447**, est. $179,621 (2 bidders) grade and drain 7.621 mi. Hy. 22 near Kenefick, Johnston Co.;

Okla.—**A. K. McBride**, 2914 O St., Fort Smith, Okla. CA **$75,800**, est. $84,473 (3 bidders) grade and drain 3.448 mi. U. S. 64 through Vian, Sequoyah Co.;

Okla.—**W. H. Blackburn**, 2636 N.W. 24 St., Oklahoma City, Okla. CA **$216,276**, est. $216,488 (1 bidder) grade and drain 4.149 mi. U. S. 271 south of Hugo, Choctaw Co.;

Okla.—**Ben Haskins**, Cordell, Okla. CA. **$719,023**, est. **$903,655** (12 bidders) grade and drain 5.98 mi. I-40 (4 lane) near Hydro, Caddo Co.;

Okla.—**F. L. Gaines & Sons**, Miami, Okla. CA **$135,313** est. $135,743 (1 bidder) grade and drain 5.979 mi. U. S. 66 east of Foyil, Rogers Co.;

Okla.—**Peter Kiewit & Sons**, S.E. Station, Wichita, Kan. CA **$122,000**, est. $115,384 (1 bidder) grade and drain 1.964 mi. and two bridges on bypass road to Callery Chemical Plant near Muskogee, Muskogee Co.;

Okla.—**Palleson Constr. Co.**, 2808 N.W. 18 St., Oklahoma City, Okla. CA **$106,734**, est. $136,259 (11 bidders) grade and drain 5,359 mi. U. S. 281 north of Gracemont, Caddo Co.;

Okla.—**Palm Paving Co.**, 1615 N. Broadway, Oklahoma City, Okla. CA **$148,520**, est. $152,068 (3 bidders) grade and c. conc. wd'n. 0.882 mi. U. S. 60 in Bartlesville, Washington Co.;

Okla.—**Pool Constr. Co.**, Box 540, Shawnee, Okla. CA **$143,271**, est. $160,271 (7 bidders) stab. aggreg. base and b. conc. wid'n. 2.802 mi. U. S. 69 near Atoka, Atoka Co.;

Okla.—**Park-Ward Co.**, Commerce Exchange Bldg., Oklahoma City, Okla. CA **$301,616**, est. $302,916 (4 bidders) grade, drain, wid'n. and b. conc. surf. 3.542 mi. U. S. 66 north and east of Stroud, Lincoln Co.;

Okla.—**Simms Inc.**, Duncan, Okla. CA **$237,140**, est. $272,201 (5 bidders) grade and drain 4.691 mi. U. S. 70 west of Johnson County line, Carter Co.;

Okla.—**W. E. Steelman**, Box 1283, Oklahoma City, Okla. CA **$796,266**, est. $761,930 (6 bidders) grade, drain and c. conc. 2.71 mi. Hy 99 in Ada, Pontotoc Co.;

Okla.—**Smith Bros.**, Noble, Okla. CA **$332,092**, est. $383,303 (8 bidders) grade, drain 7.004 mi. Hy. 199 west of Antioch, Marshall Co. Bids Oct.7. Grand total $4,642,805. CD 9/24.

▲ **COLORADO**—State Hy. Dpt., 4201 East Arkansas, Denver,

Colo.—**Roberts Contr. Co. & Western Paving Constr. Co.**, 5105 North Washington, Denver, Colo., CA **$2,071,663**, est. $2,008,000, stabilization and concrete paving 20.454 mi. Colorado Proj. No. I-79-4 (6) 347, Elbert Co.;

Colo.—**Peter Kiewit Sons Co.**, 1950 South Colorado Blvd., Denver, Colo., CA **$919,784**, est. $956,000, grading, stabilization, structures and concrete paving, 6.384 mi. Colorado Proj. No. I-80S-1 (11), Adams Co. Mark U. Watrous, Denver, hy. engr. Bids Oct. 9. CD 10/1.

BUILDINGS—LB & CA

Adolfson & Peterson, 2807 Bryant Ave South, Minneapolis, Minn., CA **$452,300** (9 bidders), 1 story ELEMENTARY SCHOOL, 74th St. and Bloomington Ave., RICHFIELD (P. O. MINNEAPOLIS), MINN. Bd. Educ., Richfield, Minn. Bids Oct. 7. CD 9/15.

▲ **Universal Constr. Co.**, 1200 Southwest Blvd., Kansas City, Mo., CA Est. **$2,000,000**, 2 story, 215,000 sq. ft. brick, concrete, glass facing ASSEMBLY PLANT addn., at Leeds, KANSAS CITY, MO. Chevrolet Div., General Motors, 3044 W. Grand Blvd., Detroit, Mich. Awarded Oct. 8. CD 9/19.

▲ **Horster Constr. Co.**, 507 S. Main St., Tulsa, Okla. CA **$1,325,460** 2 story, bsmnt., 140 x 200 ft. ACCOUNTING OFFICE BLDG., TULSA, OKLA. South West Bell Telephone Co., 1010 Pine St., St. Louis, Mo. C. E. Overbeck, 895 Brookside Ave., St. Louis, Mo., archt. Awarded Sept. 11.

Dewey A. Hicks, Contractor, 508 Crockett St., Amarillo, Tex. CA **$585,000**. MOTEL, AMARILLO, TEX. Ramada Inn, Inc., 1001-11th N.E. 8th St., Amarillo, Tex. CD 10/9.

W. B. Uhlhorn, Box 2028, Harlingen, Tex. CA **$585,873**. AUDITORIUM or CIVIC CENTER, McALLEN, TEX. City, City Hall, McAlleen, Tex. Bids Aug. 8. CD 8/25, under LB.

Inwood Constr. Co., Trinity Universial Bldg., Dallas, Tex. CA **$885,000**, SHOPPING CENTER, MARSHALL, TEX. Shopping Center Investment Co., Inc., Roland Swenson, Trinity Universal Bldg., Dallas, Tex. CD 10/9.

John J. Stokes Constr. Co., Box 691, San Marcos, Tex. CA **$637,736**, Base Contr. SENIOR HIGH SCHOOL, incl. 6 bldgs., SAN MARCOS, TEX. San Marcos Ind. School Dist., San Marcos, Tex. Bids Sept. 11. CD 9/26, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

† **Utah**—BUILDINGS—BA 11/6—Zion National Park, Supt. Office, Springdale, constr. three 1 story, approx. 20,000 sq. ft. area masonry block bldgs., 4-unit apartment house, Cedar Breaks National Monument. CD 7/18.

BUILDINGS—BA

▲ **Calif., San Leandro**—LIBRARY—BA About 12/12—City, City Hall, 44,000 sq. ft. library, incl. meeting rooms and auditorium. $1,750,000. Francis J. McCarthy, 693 Mission St., San Francisco, archt. CD 10/14/57.

BUILDINGS—SLC

Wash., **Everett**—HOSPITAL—Everett General Hospital, 1321 Colby St., soon lets contract 25,000 sq. ft., rein.-con., steel frame hospital addn. $500,000. J. W. Maloney, Central Bldg., Seattle, Zone 4, archt. CD 6/5.

Wash., **Seattle**—CATHEDRAL HALL—St. Mark's Cathedral, 1551 10 Ave. N., soon lets contract 3 story, 14,750 sq. ft., rein.-con. CATHEDRAL HALL addn. $500,000. Young, Richardson & Detlie, Central Bldg., Zone 4, archts. CD 6/4/57.

HEAVY CONSTRUCTION—LB & CA

† **ALASKA**—Bureau P. Rds., Dpt. Commerce, Federal Bldg., Juneau,

M-B Contracting Co., Lloyd Bldg., Seattle, Wash., CA **$965,807**, est. $1,251,576, grading, drainage 15.3 mi. Sterling Hy. between Anchor Point and Homer with 80 ft. steel bridge over Anchor River, Proj. F-021-1 (1). E. H. Swick, regional engr. Bids Sept. 2. CD 9/10, under LB.

▲ **UTAH**—State Rd. Comn., State Capitol, Salt Lake City, Bids opened 10/7,

Utah—**Morrison-Knudsen Co.**, Box 120, Salt Lake City, Utah. LB **$972,011**. 3½ in. plant mix bit. surf. 2.671 mi. and one concrete overpass 157 ft. FA Proj. I 80N-2 (2) 68 (1-04-1 (2) Morgan Co.;

Utah—**Wangsgaard-Peterson Constr. Co.**, Box 286, Logan, Utah. LB **$293,996**, grade road 8.544 mi. U. S. 50 from Sunnyside Jct. SE FA Proj. DF-028 2 (3) & DF-028 (2) Carbon and Emery Counties. CD 9/29.

UTAH—State Rd. Comn., State Capitol, Salt Lake City, Bids opened 10/7,

Utah—**M. Morrin & Sons Co.**, 473 W. 2nd S., Ogden, Utah. LB **$560,814**, one concrete, steel overpass 279.03 ft. one concrete, steel overpass 163 ft. and 2 overpass structures 192 ft. Int. Hy. 15. FA Proj. I-15-7 (9) 310, Davis Co.;

Utah—**Allred & Mitchell & Fisher Constr. Co.**, Altamont, Utah. LB **$148,854**, one steel bridge 125.9 ft. U. S. 6 and 50 over Grassy Trail Creek, FA Proj. DF 028-2 (2) Carbon Co. CD 9/29.

ARIZONA—State 206 S. 17 Ave., Phoenix,

Royden Constr. Co., Box 3707, Phoenix, Ariz., CA **$715,683**, grading, draining, constr. interchanges 10.4 mi. Casa Grande-Tucson Hy., State Rt. 84. Pinal Co. CD 7/31/57.

▲† **Cherf Brothers, Inc., Sandkay Contractors**, and **Pfeffer & Pontius**, Ephrata, Wash., LB **$1,215,273**, earthwork and structures for Block 82 laterals, waste ways and drains, Columbia Basin Project Vantage, DC 5093, WASHINGTON, Bureau Reclamation, Dpt. Interior, Ephrata, Wash. Bids Oct. 7. CD 9/19.

† **OREGON**—Bureau P. Rds., Morgan Bldg., Portland, Bids opened 10/3,

Ore.—**Dennis & Sons**, 7355 S.W. Johnson Creek Blvd., Portland, Ore. LB **$456,071**, est. $679,190 (12 bidders) grade 2.832 mi. Oregon Coast Hy. near Otis Junction, Lincoln Co.;

Ore.—**Slate & Hall**, 7508 S.W. 40 Ave., Portland, Ore. LB **$330,416**, est. $412,995 (13 bidders), grading 0.637 mi., slide removal 0.228 mi. Oregon Coast Hy. near Newkowin Tillamook Co. CD 9/25.

▲ **CALIFORNIA**—State Div. San Francisco-Oakland Bay Toll Crossings, 151 Fremont St., San Francisco,

Charles L. Harney, Inc., 575 Berry St., San Francisco, Calif. CA **$1,132,672**, constr. Sterling St. ramps in connection with San Francisco-Oakland Bay Bridge reconstr. proj., incl. Perry and 1st St. ramps, lowering of present Beale St. on ramp and bldg. roadway from Sterling St. to San Francisco Anchorage, San Francisco Co. Bids Sept. 30, awarded Oct. 6. CD 10/9, under LB.

▲ **Guy F. Atkinson Co.**, Box 259, Long Beach, Calif. CA **$4,041,117**. Long Beach Marina, Contr. No. 3, LONG BEACH, CALIF. City, City Hall, Long Beach, Calif. Bids Oct. 1. CD 10/6.

Webb & White, 512 S. San Vicente Blvd., Los Angeles, Calif. LB **$421,923** (8 bidders), imprv. Hill and Castelar St. from Alpine to Temple Sts., LOS ANGELES, CALIF. City, City Hall, Los Angeles, Calif. Bids Oct. 8. CD 3/22/50.

P&E Constr. Co., 1620 S. 7th St., San Jose, Calif. LB **$464,000**, storm sewer imprvs. at San Antonion piping, manholes, related work, MOUNTAIN VIEW, CALIF. City, City Hall, Mountain View, Calif. Bids Oct. 8. CD 9/25.

BUILDINGS—LB & CA

▲† **The Fluor Corp., Ltd.**, 2500 South Atlantic Blvd., Los Angeles 22, Calif. CA To exceed **$3,300,000**, design and construct WASTE CALCINATION SYSTEM, at National Reactor Testing Station, near Idaho Falls, ARCO, IDAHO. Atomic Energy Comn., Idaho Operations Office, Idaho Falls, Idaho. Completion set for February 1960. CD 7/23, under Unclassified.

University Enterprises, Inc., General Ins. Bldg., Seattle 5, Wash., Day Labor, **$500,000**, MOTEL, 2000-32 6 Ave., SEATTLE, WASH. CD 9/19.

H. Halvorson, Inc., 630 Judge Bldg., Salt Lake City, Utah. LB **$657,717** (7 bidders) 3 story, rein.-con. INDUSTRIAL COMMISSION BUILDING, CARSON CITY, NEV. Comrs. of Nevada Industrial Comn., c/o chn. 229 N. Carson St., Carson City, Nev. DeLongchamps & O'Brien, 160 N. Arlington St., Reno, Nev., archts. Bids Sept. 29.

Dike & Colegrove, Inc., 419 E. 17th St., Santa Ana, Calif., CA **$654,745**, 45 stucco DWELLINGS, Tract 2215, COSTA MESA, CALIF. Santa Ana Ranchos, 419 E. 17th St., Santa Ana, Calif.

▲ **Covina High School Dist.**, 165 W. Dexter St., Covina, Calif., rejected bids opened Oct. 1, constr. Orange-Merced HIGH SCHOOL, COVINA, CALIF. Est. **$1,200,000**. CD 9/22.

Development Engineers, Inc., 2357 W. Washington Blvd., Los Angeles, Calif. Owner Builds. **$436,600**, 37 DWELLINGS, Fieldview Ave., Larkhall Ave., Del-canyon Rd., DUARTE, CALIF.

Park Rose Homes, 934 Edie Dr., Duarte, Calif. Owner Builds. **$830,200**. thirty-one 1100 sq. ft. frame, stucco DWELLINGS, Newington St. Park Rose Ave. and S. Broach Ave. DUARTE, CALIF.

▲ **Samuel E. Barth Co.**, 1801 McDaniel Ave., San Jose, Calif. CA **$1,246,000**. masonry, concrete block, wood roof frame, etc. SARATOGA SCHOOL to accommodate 1500 students, LOS GATOS, CALIF. Los Gatos Union High School Dist., Los Gatos, Calif. Bids Sept. 25, awarded Oct. 1. CD 10/1, under LB.

Geo. L. Mallery, 10835 Santa Monica Blvd., Los Angeles, Calif. CA **$593,000**. 37 DWELLINGS, Dalmation and Fonseca Aves., LA MIRADA, CALIF. Wanda Highlands, 10835 Santa Monica Blvd., Los Angeles, Calif.

K. W. Koll, 2826 Newport Blvd., Newport Beach, Calif. CA **$400,000**. 40 DWELLINGS, San Francisquito Canyon Lane and Santa Clarita Rd., NEWHALL, CALIF. Bouquet Canyon Homes, 1769 Newport Blvd., Costa Mesa, Calif.

Quiller Constr. Co., Inc., 8374 W. 3 St., Los Angeles, Calif. CA **$803,800**, general constr. 1 story, about 56,000 sq. ft. WARD BUILDING, incl. DORMITORY WING UNITS, separate exercise yards and yard shelters, Metropolitan State Hospital, State Dpt. Mental Hygiene, W.O. 3718GC-26, NORWALK, CALIF. State Div. Architecture, 1100 S. Grand Ave., Los Angeles, Calif. Bids Oct. 1, awarded Oct. 7. CD 10/8, under LB.

Wm. McDevitt, 1934-4th St., San Rafael, Calif. CA **$400,000**, 1-2 story bldg. and 1 single story bldg. 15,000 sq. ft. each, SHOPPING CENTER on E. 3 St. incl. parking area, SAN RAFAEL, CALIF. Montecito Properties, Inc., 292 Sir Francis Drake Blvd., San Anselmo, Calif.

Roy C. Skinner Corp., c/o owner. CA **$838,575**. 61 frame, stucco DWELLINGS, N. Conception, N. Airport and N. Bonita Sts., SANTA MONICA, CALIF. Mira Loma Assoc., P.O. Box 31561, Ventura, Calif. Johnson, Egan & D'Augostino, 4868 Oak Park Ave., Encino, Calif., archts.

CANADA

BUILDINGS—SLC

▲ **Que., Montreal**—PLANT—Molson's Brewery Ltd., 1670 Notre Dame St. E., (soon lets contract) bottling plant extens. $1,200,000. Fleming & Smith, 1235 McGill College Ave., archts.

HEAVY CONSTRUCTION—LB & CA

▲ **ALBERTA**—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont.,

Storms Contg. Co., (Pacific) Ltd., 342 W. Pender St., Vancouver, B. C. LB **$1,110,834**. (4 bidders) grading, culverts, granular course base, prime road mix Mile 74 to Mile 82.3 Banff-Jasper Hy., Banff National Park, Banff. CD 5/15/57.

▲ **BRITISH COLUMBIA**—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont.,

Dawson Wade & Co., Ltd., 775 Clark St., Vancouver, B. C. CA **$1,467,136**, (10 bidders) grading, culverts and bridge constr. Mile 12.4 to Mile 18.7, Trans Canada Hy., Glacier National Park, Glacier. Awarded Oct. 3. CD 9/2, under LB.

▲ **Spino Construction, Ltd.**, 222 Sauve St. W., Montreal, Que., CA **$1,111,444**, sixth sect. Decarie-Raimbault collector sewer-trunk sewer in Westbury Ave. and branch sewer in Atholl Place, MONTREAL, QUE. City of Montreal, City Hall, Montreal, Que. CD 9/4, under LB.

BUILDINGS—LB & CA

Finley W. McLachlan Ltd., 195 Fairbank Ave., Toronto, Ont., CA Est. **$500,000**, PLANT incl. 2 story, 20,000 sq. ft. office bldg. and 40,000 sq. ft. warehouse, Moore Twp., south of SARNIA, ONT. DuPont Co. of Canada (1956) Ltd., 1135 Beaver Hall Hill, Montreal, Que. Awarded Oct. 3. CD 9/6/57.

▲ **Eastern Constr. Co. Ltd.**, Box 96, Walkerville, Ont., CA $1,885,000 (7 bidders) CLEARY AUDITORIUM CIVIC THEATRE AND CONVENTON CENTRE, WINDSOR, ONT. City of Windsor, City Hall, Windsor, Ont. Bids Sept. 19, awarded Oct. 2. CD 9/5.

D & S Constr. Co., 9301 15 Ave., St. Michel, Montreal suburb, Que. Owner Builds $600,000 concrete, brick wall HOUSING PROGRAM, 16 Ave., MONTREAL, QUE.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Conn., Hartford**—Metropolitan Dist., 115 Broad St., 66 in. pipe line from Nepaug Reservoir to western slope of Talcott Mountain, Avon, Cantor and New Hartford, $6,250,000; 72 in. pipe line from Barkhamsted Reservoir for 6 miles to Nepaug Reservoir, Barkhamsted and New Hartford, $6,250,000.

▲ **Ill., Moline**—City, City Hall, WW addn., water mains, $1,000,000. Gresley & Hansen, 220 S. State St., Chicago, consult. engrs.

▲ **Tex., Alice**—City, City Hall, dual reservoir sys., within a 12-mile radius $2,250,000; 30 in. water main, reservoir to city limits. $1,000,000. for domestic and industry water supply.

SEWERS, WASTE DISPOSAL

▲ **Mich., Ecorse**—City, City Hall, $3,894,000 bond election Nov. 4, sewerage sys., constr. lift station.

BRIDGES

▲ **INDIANA AND KENTUCKY**—State Hy. Dpt., 102 N. Senate Ave., Indianapolis, Ind., **Floyd Co., Ind. and Jefferson Co., Ky.**—bridge, approaches between Louisville, Ky. and New Albany, Ind., $31,000,000. Hazelet & Erdal, 403 Commerce Bldg., Louisville 2, Ky., consult. engrs., may start constr. Spring 1959. CD 6/26/56, under Indiana Toll Bridge Comn., as owner.

STREETS AND ROADS

▲ **OHIO**—State Hy. Dpt., Columbus, Zone 15, **Huron Co.**—relocation of 18 mi. Rts. 18 and 20, 250 and 13 Outer belt bypass, Norwalk, $13,255,946. Beiswenger & Hoch, 1006 Grant St., Akron, consult. engrs.

EARTHWORK, WATERWAYS

▲ **California**—Oroville-Wyandotte Irrigation Dist., Oroville, South Fork Proj. on Feather River, incl. 8 dams, reconstr. dam, 18 mi. tunnels, 11,700 ft. penstocks, 3 hydro-electric plants, 17 mi. power and irrigation canals. $50,000,000. Bechtel Corp., 101 California St., San Francisco, engrs. Bids in Winter 1959. CD 10/21/51.

PUERTO RICO

▲† **Puerto Rico**—U. S. Eng., 21 St. and Virginia Ave. N. W., Wash., D. C., imprv. San Juan Harbor. $6,476,800 (no appropriation).

AMERICANS ABROAD

▲ **Guatemala**—OIL REFINERY—Breaux Bridge Oil Refining Co., J. S. Shively & Associated Companies, Gulf Bldg., Houston, Tex., U. S. A., plans by Grebe & Doremus Engineering Co., 4601 Stanford St., Houston, Tex., oil refinery 3,500 bbl. daily capacity, Santo Tomas-Puerto Barrios (between the 2 towns), $3,500,000. CD 10/6.

PUBLIC BUILDINGS

▲ **Calif., San Rafael**—HOSPITAL, etc.—Marin Co., Courthouse, San Rafael, bond election Nov. 4, county hospital nursing home, $1,124,192; juvenile hall $420,000; convert juvenile hall for ambulatory patients $362,800, near here. Eugene E. Crawford, 920 5th St., archt. Harold Engle, 1539 4th St., consult. engr.

▲ **Conn., West Haven**—SCHOOL—Town, Town Hall, convert West Haven High School to Junior High School. $1,000,000.

▲ **Ga., Atlanta**—ELECTRICAL ENGINEERING—University System Bldg. Auth., 244 Washington St., S.W., electrical eng. bldg. at Ga. Tech. $3,000,000. Robert & Co. Assocs., 96 Poplar St. N.W., archts. and consult. engrs. CD 8/11.

▲ **Ga., Augusta**—HEALTH FACILITIES—University System Bldg. Auth., 244 Washington St. S.W., Atlanta, plans by Abreu & Robeson, Inc., 141 Walton St. N.W., Atlanta, health research facilities at University of Ga. Medical College, $2,000,000. CD 10/20/47.

▲† **Ga., Macon**—HOUSING—Robins Air Force Base, Procurement Office, Macon, 150 units, Capehart Housing, Robins Air Force Base, Sect. 2. $2,475,000.

▲† **Ga., Savannah**—HOUSING—U. S. Eng., P.O. Box 889, 73 units. Capehart Housing Fort Stewart sect. 2, $1,204,500.

▲ **Ind., Fort Wayne**—GENERATING PLANT—Bd. P. Wks., City Hall, electric plant, generating plant, existing sys. imprvs. $4,000,000, Emery, Marker & Campbell, Toledo Trust Bldg., Toledo, O., consult. engrs.

▲ **Ind., Indianapolis**—SCHOOL—Franklin Twp. School Bd., high school, southwest corner of Franklin Rd. and Stop 8 Rd. $1,000,000.

▲ **Mich., Detroit**—GARAGE—City, Municipal Parking Auth., City Hall, parking garage under Cadillac Square. $4,000,000. H. K. Ferguson Engineering Co., 1302 Cadillac Tower, consult. engr.

▲ **Mo., Springfield** — SCHOOLS — Reorganized School Dist. No. 12 of Green Co., 940 North Jefferson Ave., voted $1,750,000 bonds Sept. 30, schools. CD 9/2.

▲ **Nev., Reno**—DORMITORY, etc.—University of Nevada, plans by Vhay & Grow, 33 E. Truckee River Lane, men's dormitory, plans by Ferris & Erskine, 458 California Ave., married housing, plans by Frank W. Green, 6155 Lakeside Dr., dining hall, $1,382,000. CD 9/29.

▲ **N. H., Manchester**—SCHOOL—City, Supt. Schools, 88 Lowell St., plans by Dirsa & Lampron, 922 Elm St., assoc. archts., and Doehler & Isaak, 1880 Elm St., high school, $2,500,000. Constr. 1959. CD 10/3/56.

▲ **N. J., Millville**—SCHOOL—Bd. Educ., will vote Nov. 4 referendum for approval of project and issuance of bonds, high school, $2,375,000, Howell, Lewis, Shay Assoc., Packard Bldg., Phila., Pa., archts., CD 8/23/57.

▲ **N. J., Paramus**—SCHOOL—Bd. Educ., school addn. program project approved and $3,409,000 bonds authorized Sept. 30. $3,400,000. Arthur Rigolo, Rte. 46 and Grove St., Clifton, archt. CD 9/19.

▲† **N. J., Wrightstown**—HOUSING—McGuire Air Force Base, Procurement Office, 1,450 units Capehart Housing, McGuire Air Force Base, Sect. No. 2. $23,925,000.

▲ **N. Y., Albion**—HOSPITAL—Bd. Supervs. Oleans Co., Court House, county hospital-infirmary. $1,000,000.

▲ **N. C., Charlotte**—OFFICE—Mecklenberg Co. Comn., Court House, $2,000,000 bond election Nov. 4, county office bldg. CD 9/4/57.

▲ **O., Cincinnati**—SCHOOL—Monfort Heights Bd. Educ., W. Fork Rd., bond election Nov. 4, Junior High School, Jessup Rd. $1,250,000. Cellarius & Hilmer, 4 and Main Sts., archts.

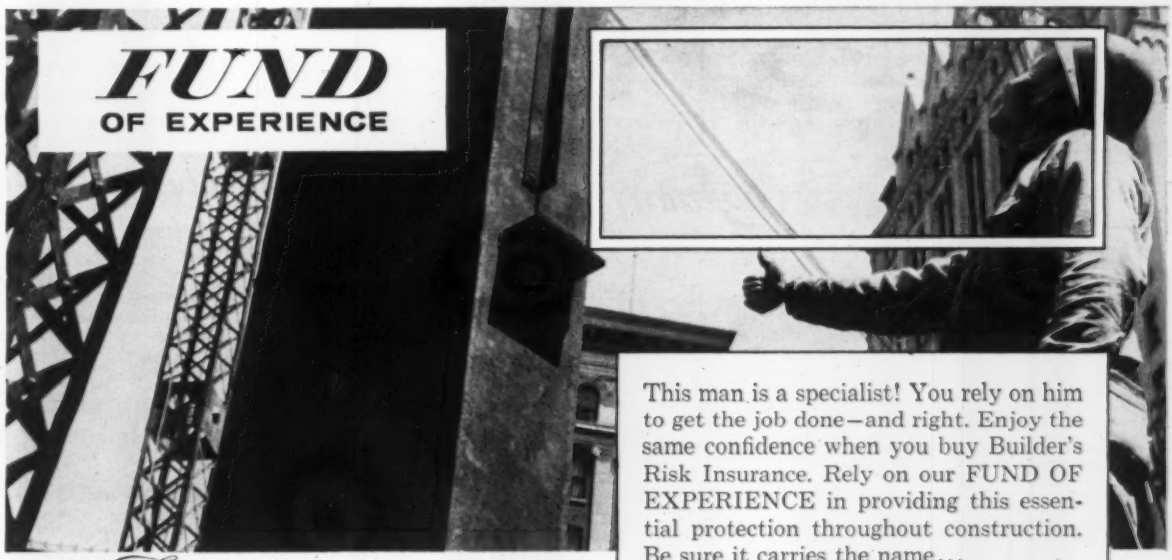
▲ **Pa., Bolivar**—SCHOOL—Pa. P. School Bldg. Auth., 25th and Market Sts., Harrisburg, Proj. 725-604, school for Laurel Valley Joint School Dist. $1,530,555.

▲ **Pa., McClellandtown**—SCHOOL—Pa. P. School Bldg. Auth., 25th and Market Sts., Harrisburg, Proj. 858-654, school, German Twp. School Dist. $1,097,445. CD 3/8/56, under Pa., Uniontown.

▲ **Pa., Phila.**—CITY HALL—Dpt. Procurement, City Hall Annex, $10,000,000 bond election Nov. 4, city hall, Reybune Plaza. $16,000,000. CD 3/11.

▲ **Tenn., Nashville** — AUDITORIUM — City Auditorium Comn., City Hall, plans by Marr & Holman, Stahlman Bldg., arena-type amphitheater auditorium. $5,000,000. Clarke & Rapuano, 830 3 Ave., New York, N. Y., consult. engrs. CD 6/14.

▲† **Wash., Tacoma** — HOUSING — McChord Air Force Base, Procurement Office, 400 units Capehart Housing, McChord Air Force Base, Sect. No. 2. $6,600,000.



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▲ Ont., Toronto—CITY HALL—City, City Hall, plans by Viljo Rewell, Helsinki, Finland, 32 story, 330 ft. high and 26 story, 290 ft. high City Hall. $18,000,000. H. K. Ferguson Co. of Canada Ltd., 20 College St., consult. engrs. CD 9/1/58.

COMMERCIAL BUILDINGS

▲ Ark., Little Rock—SHOPPING CENTER—Creek Development Co., Inc., plans by Edw. F. Brueggeman, Pyramid Life Bldg., 132,000 sq. ft. village shopping center on 17½ acre tract southeast corner Asher and Hayes Sts., and parking areas, $3,500,000. CD 9/9/57.

▲ Calif., San Rafael—APARTMENT—Dr. Robert Oslar & H. A. Merlo, 380 Coleman Dr., plans by Harry Reid, 36 Main St., Tiburon, seven 104-unit apartment development, Puerto Suello Hill, $1,500,000.

▲ Conn., West Hartford—HOUSES—Beaudoin & Milkie, Ellington Rd., South Windsor, 80 houses, "Wolcott Estates," Elmfield St. $1,480,000.

▲ Fla., Coral Gables—SCHOOL—University of Miami, 1200 Campo Sano Ave., plans by Wahl Snyder & Assocs., 1177 NE 79 St., 6 story Engineering School, near San Amaro Dr. and Miller Ave. $1,000,000 CD 4/8/57.

▲ Fla., Miami—RESIDENCES—Palmetto Country Club Estates, P. O. Box 1098, Perrine, plans by Gerald W. West, 299 Harbor Court, Key Biscayne, Miami, 650 residences, $7,500,000.

▲ Ill., Chicago—DIAL EXCHANGE—Illinois Bell Telephone Co., 212 W. Washington Blvd., plans by Holabird, Root & Burgee, 180 N. Wabash Ave., 3 story, bsmnt., brick dial exchange bldg. $1,000,000.

▲ Ill., Chicago—STUDENT UNION—Illinois Institute of Technology, 300 S. Federal St., 100,000 ft. glass, steel Student Union Bldg., Ogden Field, 32 and 33, Dearborn and Federal Sts. $2,400,000. CD 11/13/52.

▲ Ill., Chicago—APARTMENT HOTEL—R. S. Levy & Jerrold Wexler, c/o Geo. S. Lurie Co., 120 S. LaSalle St., Zone 3, plans by Edward Steinborn, 176 W. Adams St., Zone 3, conversion of office bldg. to apartment hotel incl. air conditioning, parking garage, 225 N. Wabash Ave. $3,000,000.

▲ Ill., East St. Louis—HOMES, etc.—Oliver L. Parks Realty Co., Inc., 815 St. William St. Cahokia (East St. Louis, P. O.) community development homes, shopping center, parks, other facilities on 568 acres. Parks Metropolitan Airport south of here. $8,000,000.

▲ Mo., St. Louis—TREATMENT—St. Louis University, 221 N. Grand Blvd., Zone 3, plans by Leo A. Daly Co., 3207 Olive St., Zone 3, 4 story, 35,000 sq. ft. treatment bldg., 1325 S. Grand Blvd. $1,000,000. CD 10/2.

▲ N. J., Red Bank—SCHOOL—Parish St. James, Drummond Place, and Archdiocese of Trenton, plans by Ricker & Axt, 6115 Hudson Ave., West New York, 3 story elementary school, Peters Place. $1,000,000. CD 9/29.

▲ N. Y., New York—SYNAGOGUE—Congregation Shaaray Tefila, c/o Horace Ginsbern & Assocs., archts., 205 E. 42 St., Zone 17, synagogue southwest corner of 79th St. and Second Ave. $1,500,000. John J. McNamara, 701 Seventh Ave., Zone 19, engr.

▲ N. Y., New York—APARTMENT—Asher Dann & Sons, 678 Lexington Ave., Zone 22, plans by H. I. Feldman, 415 Lexington Ave., Zone 17, 17 story apartment, northeast corner of Lexington Ave. and 33rd St. $1,000,000.

▲ O., Cleveland—MOTEL—Mintz Constr. Co., 3121 Euclid Ave., Zone 15, plans by Norman M. Giller & Assoc., 975 Arthur Godfrey Rd., Miami Beach, Fla., 4 story, 162 x 382 ft. motel, Euclid to Chester Aves., incl. garden park, comb. swim pool and skating rink, $2,500,000.

▲ O., Lorain—HOSPITAL WING—St. Joseph's Hospital, Sister Theophane, admin., Broadway and 21 St., plans by Garfield, Harris, Schafer, Flynn & Williams, 1740 E. 12 St., Cleveland, Zone 14, hospital wing, $2,000,000-$2,500,000. CD 3/7/57.

▲ O., Wickliffe—APARTMENT—Owner, c/o Weinberg & Teare, archts, Citizens Bldg., Cleveland, Zone 14, will not construct Ridewick Gardens Apartment project, $2,500,000. Project abandoned. CD 3/24.

▲ Tex., Arlington — HOTEL, etc. — Great Southwest Corp., 401 Wynnewood Village, Dallas, hotel. $2,000,000; Disneyland type amusement center, $750,000.

▲ Tex., Austin—STORE—Montgomery Ward & Co., 409 Congress Ave., store, Capitol Plaza Shopping Center. $2,000,000.

▲ Tex., Fort Worth—DWELLINGS—Luxury Homes, Inc., and Mack Bean Real Estate Co., Boat Club Rd., eighty, 1 story, masonry dwellings, Green Field Acres, Boat Club Rd. $1,440,000.

▲ Tex., Houston—OFFICE—Humble Oil & Refining Co., 1216 Main St., plans by Golemon & Rolfe, 5100 Travis St. and Pierce & Pierce, 2200 Welch St., both Houston, Tex., consult. archts. and Welton Becket & Assocs., 2225 Bryan St., Dallas, Tex., Los Angeles, Calif., office. $22,000,000. Thos. E. Willier, 1528 Commerce Bldg., Houston, Tex., consult. engr. McClelland Engineers, Inc., 2649 Main St., soil and foundation consults. CD 8/1.

▲ Tex., Marshall—SHOPPING CENTER—Shopping Center Investment Co., Inc., Roland Swenson, Trinity Universal Bldg., Dallas, plans by White & Feinberg, 2214 Cedar Springs Rd., Dallas, 1 story, 62,000 sq. ft., masonry shopping center, $1,000,000.

▲ Wash., Edmonds—HOSPITAL—Stevens Memorial Hospital Assn., 112 3 Ave., hospital, $1,250,000. Work expected to start next year.

▲ Wash., Renton—OFFICE and ENGINEERING—Boeing Airplane Co., Transport Div., office and engineering bldg. $2,000,000.

▲ Wash., Seattle—HOSPITAL—Group Health Hospital, 201 16 Ave. N., plans by Young, Richardson & Carleton, Central Bldg., Zone 4, 5 story, rein.-con., 168-bed hospital addn. $3,000,000. Bids to be called early next year. CD 1/5/56.

▲ Que., Boucherville—HOUSING—Concession Development, Inc., 5944 Park Ave., Montreal, plans by Nathan B. Schertzer, 630 Marlatt St., St. Laurent, housing program, $4,000,000.

INDUSTRIAL BUILDINGS

▲† Alaska, Ketchikan—OIL TERMINAL—Union Oil Co. of Calif., Inspection and Control Lab., San Francisco, Calif., oil terminal, $1,500,000. work to start this fall.

▲ Ark., El Dorado—REFINERY—Monsanto Chemical Co., Lion Oil Division, El Dorado, refinery addns. $3,000,000.

▲ Ind., Indianapolis—FACTORY—Indiana Gear Works, 1458 E. 19 St., factory northeast corner, E. 30th and Post Rd. $1,750,000, Constr. in 1959.

▲ Mass., Lexington—HEADQUARTERS—Raytheon Mfg. Co., Foundry Ave., Waltham, headquarters bldg., office and research, Rtes. 2 and 128. $2,000,000. Bids this month.

▲ Okla., Ponca City—PLANT—Continental Carbon Co., Ponca City, carbon black plant expansion. $1,500,000.

▲ Tex., Houston—FACTORY—DeVoe-Reynolds Co., 1321 McKinney Ave., paint production factory. $1,000,000, Constr. 1959.

▲ Wash., Kennewick—FERTILIZER PLANT—California Spray-Chemical Corp., Lucas and Ortho Way, Richmond, Calif., fertilizer plant. $4,600,000. Work to start next year.

▲ Que., Pointe Aux Trembles — PLANT — Continental Paper Productions, subsidiary of Canadian International Paper Co., 1463 Sun Life Bldg., Montreal, 200,000 sq. ft. paper specialty plant. $2,500,000.

UNCLASSIFIED

▲ Ga., Brunswick—TERMINAL—Georgia Ports Authority, P. O. Box 1039, Savannah, general cargo terminal, $2,000,000. Fay, Spofford & Thorndike, 11 Beacon St., Boston, Mass., consult. engrs. CD 1/31.

▲ N. Y., Brooklyn—MARINE TERMINAL—Dpt. Marine & Aviation, Pier A, North River, New York, Zone 4, Proj. D-118, marine terminal to incl. single deck cargo pier, 1 story cargo shed and inshore truck operating area at Atlantic Ave. to be leased and operated by Sottnek Terminal Corp. $5,500,000. Leroy E. Driver, c/o Sottnek Terminal Corp., 17 Battery Pl., New York, Zone 4, engr. CD 8/17/45.

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- ☐ Military and management consultation and operations analysis
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CPA 10

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
October 27 Connecticut October 28 Massachusetts

BUILDINGS—LB & CA

▲ **John Bowen Co., Inc.**, 173 Boston St., Dorchester, Mass., LB $1,321,300, JUNIOR HIGH SCHOOL, Whitney Estate, SWAMPSCOTT, MASS. Town, Supt. Schools 24 Redington St., Swampscott, Mass. Bids Oct. 9. CD 9/25.

▲ **Gilbane Bldg. Co.**, 90 Calverly St., Providence, R. I. LB $2,082,000. HOSPITAL WING, High Service Ave., NORTH PROVIDENCE, R. I. Our Lady of Fatima Hospital, High Service Ave., R. C. Diocese of Providence, 34 Fenner St., Providence, R. I. Bids Oct. 15. CD 9/22.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
October 30 Pennsylvania
STREETS AND ROADS
October 28 Maryland October 30 Pennsylvania

BUILDINGS—BA

† New York—HOUSING—BA 11/20—U. S. Eng., 111 E. 16th St., New York, Zone 3, 64 single family units Capehart family housing, Niagara Defense Area: (1) 32 at Cambria (2) 32 at Grand Island. Serial No. ENG-30-075-59-85 $800,000-$1,000,000. CD 12/5/56

HEAVY CONSTRUCTION—LB & CA

▲ **Andrew Catapano Co., Inc. & Grow Constr. Co.**, 8843 76th Ave., Glendale, N. Y., CA $5,098,881, Contr. 2A-Kent Ave. Intercepting Sewer, Ash, Commercial and West Sts. and Greenpoint Ave.; Contr. No. 2B, Kent Ave. Intercepting Sewers, Greenpoint Ave. and Franklin St. for "Newton Creek Pollution Control Project, Brooklyn Boro, BROOKLYN, N. Y. Dpt. P. Wks., Municipal Bldg., Brooklyn 7, N. Y. Bids July 22. CD 8/13, under LB.

▲ **Philsan Corp.**, 153 W. 42 St., New York, N. Y. CA $1,143,235, est. $1,100,000 intake and water tunnel for Sturgeon Point Filtration Plant, BUFFALO, N. Y. Erie County Water Auth., 338 Ellicott Square Bldg., Buffalo 3, N. Y. Bids Sept. 4. CD 9/10, under LB.

▲ **Westinghouse Air Brake Co.**, 350 Fifth Ave., New York 1, N. Y. LB $3,223,769 (2 bidders), furnishing, installing block signaling and interlocking equip for rehabilitation of Lexington Ave. Line, IRT Division, Wall St. to Astor Pl., Contr. No. S-101, Manhattan Boro, NEW YORK, N. Y. New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids Oct. 10. CD 9/16.

▲ **PENNSYLVANIA**—Pa. Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg.

Bero Constr. Corp., P. O. Box 70, Waterloo, N. Y. CA $4,545,902, Erie Throughway, Section 11, North East Twp. adjacent to New York line, 4.28 mi. 4 lanes divided concrete hy. separated by an earth medial area 56 ft. wide; 13 bridges, incl. 5 pairs; drainage structure, marginal roads, intersecting roads and ramps, FAI, Erie Co. CD 8/7, under LB.

▲ **PENNSYLVANIA**—Pa. Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg.

Latrobe Road Constr. Co., Box 150, Latrobe, Pa. CA $5,242,201, est. $4,500,000, 26,216 ft. divided hy. c. conc., 24 ft. wide each side of divisor 9 bridges, U. S. 30 Greensburg By-pass, Proj. 706-1, Hempfield Twp., Greensburg City, South Greensburg and SW Greensburg Boros, Westmoreland Co. Bids July 24, awarded Oct. 14. CD 7/28, under LB.

▲ **MARYLAND**—State Rds. Comm., 108 E. Lexington St., Baltimore 2. Bids opened 10/14.

M. J. Grove Lime Co., Lime Kiln, Md. LB $1,117,893 (3 bidders), grading, drainage, surf. 5.13 mi. Burkittsville to Middletown, F-593-1-720, Frederick Co. CD 10/3.

BUILDINGS—LB & CA

▲ **Harboto Assocs., Inc.**, 17 Neptune Ave., Brooklyn, N. Y., Owner Builds, $1,500,000, 6 story APARTMENT for 163 families and 33-car GARAGE, 120 Caton Ave., BROOKLYN, N. Y. Morris Rothstein & Son, 186 Joralemon St., Brooklyn 2, N. Y., archts. CD 9/5.

▲† **R. S. Noonan, Inc.**, 26 N. Duke St., York, Pa., LB $1,793,397 (3 bidders), POST OFFICE and COURT HOUSE, JAMESTOWN, N. Y. General Services Admin., 250 Hudson St., New York 13, N. Y. Bids Oct. 14. CD 9/15.

▲ **Fisher Bros.**, 6 E. 45th St., New York 17, N. Y., Owner Builds, $15,000,000, APARTMENT DEVELOPMENT, on site bounded by Lexington Ave., 3 Ave., E. 68 and E. 69 Sts., NEW YORK, N. Y. Emery Roth & Sons, 575 Madison Ave., New York 22, N. Y., archts. CD 9/5.

▲ **Millard Shroder, Inc.**, 369 Lexington Ave., New York 17, N. Y. CA Est. $1,750,000, 14 story APARTMENT, southwest corner York Ave. and 86 St., NEW YORK, N. Y. Mi-Bert Corp., c/o Schuman & Lichtenstein, archts., 369 Lexington Ave., New York 17, N. Y.

▲ **Seymour & Edward Kimmel**, 65 E. 76th St., New York 21, N. Y., Owner Builds, $1,350,000, APARTMENT and GARAGE, 799-805 Park Ave. and 101-11 E. 74th St., NEW YORK, N. Y. H. F. Feldman, 415 Lexington Ave., New York 17, N. Y., archts. CD 8/11.

▲ **Wigton-Abbott Corp.**, 1225 South Ave., Plainfield, N. J., CA $3,500,000, design and construct 1st unit, 1 story, 250,000 sq. ft. PLANT, 150-acre tract on east side of New Jersey Turnpike, CRANBURY, N. J. Carter Products, Inc., U. S. Hy. 1 and George Rd., Cranbury, N. J. CD 7/25.

▲† **Dean Constr. Co., Inc.**, 29-28 41 Ave., Long Island City, N. Y., CA $1,829,000, SPECIAL WEAPONS BLDG., Picatinny Arsenal, Serial No. ENG-31-075-59-30, DOVER, N. J. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids Sept. 30. CD 10/3, under LB.

▲ **William L. Blanchard Co.**, 45 Pioneer St., Newark 3, N. J. CA Est. $10,000,000, 6 story HOSPITAL, MEDICAL CENTER, Old Short Hills Rd., LIVINGSTON, N. J. St. Barnarabas Hospital, 685 High St., Newark, N. J. CD 3/30/56.

▲ **Arthur Venneri Co.**, 300 North Ave. East, Westfield, N. J., LB $4,847,000, general contract 500 unit HOUSING, Lane, Temple, Northwest and Mattlock Sts., Proj. N. J. 21-5, PATERSON, N. J. Housing Auth. of City of Paterson, 29 Harrison Pl., Paterson, N. J. Bids Oct. 8. CD 9/26;
Frank McBride Co., 75 Spring St., Paterson, N. J., LB $435,723, plumbing contract (Paterson, N. J.);
J. W. Broadfoot, Inc., 306 E. 21 St., Paterson, N. J., LB $354,667, electrical contract (Paterson, N. J.).

▲ **James Keelty & Co., Inc.**, 5716 York Rd., Baltimore 12, Md., Separate Contracts, $1,079,000, 68 brick 1-family, 2 story DWELLINGS, near BALTIMORE, MD.

Baltimore Contractors, Inc., 711 S. Central Ave., Baltimore 2, Md., CA $250,000, 1 story, 163x240x41 ft., 5-in. masonry, steel STORAGE BLDG., BALTIMORE, MD. General Refractories, Chesapeake Ave. and 7th St., Baltimore 25, Md. Howard W. Morgan, c/o owner, engr.

▲ **John McShain, Inc.**, 1501 N. Arlington Ridge Rd., Arlington, Va. CA $3,329,000, constr. OFFICE BLDG., adjoining Embassy, WASH., D. C. British Embassy Ministry of Works, 3100 Massachusetts Ave. N. W., Wash., D. C. Bids Sept. 15. CD 9/18, under LB.

▲ **Roscoe Engineering Corp.**, 1107 19 St. N. W., Wash., D. C. LB 1,269,000 (7 bidders) SOCIAL CENTER and DORMITORY, WASH., D. C. Catholic University, 620 Michigan Ave. N.E., Wash., D. C. Bids Oct. 15. CD 10/1.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
October 28 West Virginia November 7 Kentucky
STREETS AND ROADS
October 28 West Virginia October 31 Kentucky
November 18 Florida

▲† **Kentucky and Tennessee**—BA 11/20—U. S. Eng., 306 Federal Office Bldg., Nashville, Tenn., Locks for Barkley Lock and Dam, 3 mi. above mouth of Cumberland River, Lyons and Livingston Counties, CIVENG-40-058-59-3. Over $15,000,000. Extended date. CD 10/8.

BUILDINGS—BA

▲ **La., Alexandria**—CHURCH, etc.—BA 11/12—Highland Baptist Church, 520 Olive St., Shreveport, 3 story, 61,000 sq. ft. rein.-con. frame, granite, glass and brick church and 6,480 sq. ft. book store for Louisiana Baptists Main Bldg. $1,350,000. Plans deposit $50. Carl L. Olschner & Assoc., 412 Pere Marquette Bldg., New Orleans, La., archts.

HEAVY CONSTRUCTION—LB & CA

▲† **Nello L. Teer**, Trust Bldg., Durham, N. C., LB $2,246,750 (8 bidders), site work and access road, Naval Radio Research Observatory, NBy-17809, Sub Contr. No. 1, SUGAR GROVE, W. VA. Dist. P. Wks. Office, Fifth Naval Dist., Room 307, Bldg. N-26, Naval Base, Norfolk 11, Va. Bids Oct. 14. CD 9/25.

▲ **GEORGIA**—State Hy. Dpt., General Office, No. 2 Capitol Sq., Atlanta. Bids opened 10/10.

Ga.—**C. W. Matthews Contg. Co., Inc.**, Box 195, Marietta, Ga., LB $582,673, 9.62 mi. grading, paving, 4 bridges Whitesburg-Douglas Rd., State Rte. 5, Fed. Aid Secondary Proj. No. S-0844 (5) Carroll Co.; LB $395,588, 7.763 mi. wid'n., resurf. and widening 2 existing bridges Austete-Atlanta Rd., State Rt. 8, Fed. Aid Proj. No. DF-033-1-(2) Cobb Co.; LB $580,280, 11.876 mi. wid'n., resurf. and widening 1 bridge Athens, Georgia-Anderson, South Carolina Rd., State Rt. 8, U. S. Route 29, Fed. Aid Proj. No. DF-033-2 (6) Franklin and Hart Counties; LB $174,566, 1.875 mi. grading, paving Lake Burton-Lakemont Rd., FAS Rt. 881 State Rt. 15, Fed. Aid Proj. No. FH-10-B, Rabun Co.;

Ga.—**R. G. Foster & Co.**, Drawer 8, Wadley, Ga., LB $599,548, 12.026 mi. wid'n., reconstr. Savannah Springfield Rd., State Rte. 21 in Rincon, Fed. Aid Proj. No. DF-040-2 (2) Effingham Co.; LB $306,530, 3.61 mi. grading, paving Clio, Georgia-Garnett, South Carolina Rd., State Rte. 119 at Clio, Fed. Aid Proj. No. F-103-1 (2) Effingham Co.;

Ga.—**Dunn Constr. Co.**, Inc., 2508 Third Ave. North, Birmingham, Ala., LB $404,572, 9.502 mi. wid'n., resurf. Tifton-Ashburn State Rte. 7, U.S. Rte. 41, Fed. Aid Proj. No. DF-001-2 (13), Tift Co.;

Ga.—**Wright Contg. Co.**, Drawer 1580, Columbus, Ga., LB $7,742,361, 7.399 mi. divided lane grading and paving, 12 hy. grade separation structures and 1 railroad grade separation structure Atlanta-Augusta Freeway, Fed. Aid Proj. No. 0-20-2 (6) 58 (I-402-2(6) "old") Fulton and Dekalb Counties;

Ga.—**Burtz-Durham Constr. Co.**, Box 459, East Point, Ga., LB $1,071,215, 0.928 mi. grading, paving 0.492 mi. grading only 2 hy. grade separation structures and 1 railroad underpass US Rte. 29-Circumferential Connector Rd., Fed. Aid Proj. No. F-086-0(4), Fulton Co.;

Ga.—**Henry Newton Co.**, Box 428, Decatur, Ga., LB $2,176,462 relocating Washington St., wid'n. Clark St., raising Capitol Ave. and constr. 5 hy. grade separation structures at intersection of Atlanta North-South Expressway and future Birmingham-Atlanta-Augusta Expressway, Fed. Aid Proj. No. 1-75-2(13) 251 CT 1 (1-4012 (13) "old"), Fulton Co.;

Ga.—**W. L. Robison, Inc.**, 1224 W. Rugby Ave., College Park, Ga., LB $426,220, 11.125 mi. grading, paving and 4 bridges Barwick-Morven Rd., FAS Route 1780, FAS Rte. 1209, Fed. Aid Secondary Proj. No. S-1780, Brooks Co.;

Ga.—**W. E. Graham & Sons**, Cleveland, N. C. LB $1,309,167, 5.001 mi. grading, paving and 3 bridges, Tallulah Falls-Clayton Rd., State Rte. 15, Fed. Aid Proj. No. F-055202 (6) Rabun Co.;

Ga.—**Sam Finley, Inc.**, 292 North Ave. N. W., Atlanta, Ga. LB $464,796, 18.561 mi. wid'n., reconstr., and resurf. Lumpkin-Cusseta Rd., State Rte. 1, US Rte. 27, Fed. Aid Proj. No. DF-027-3(2) Stewart and Chattahoochee Counties;

Ga.—**DuBose Constr. Co.**, Box 3321, Montgomery, Ala., LB $1,692,985, 1.845 mi. grading, divided lane paving, Bainbridge By-Pass Rd., Fed. Aid Proj. No. UG-027-2(3) and U-007-1(5), Decatur Co.;

Ga.—**Acme Constr. Co.**, Cochran, Ga., LB $378,360, 7.132 mi. wid'n., resurf. Vienna-Perry Rd., State Rte. 7, Fed. Aid Proj. No. DF 001-2 (12) Dooly and Houston Counties. CD 10/1.

▲ **GEORGIA**—State Hy. Dpt., General Office No. 2, Capitol Square, Atlanta, Bids opened Oct. 1,

Ga.—**Ballenger Paving Co.**, Box 927, Greenville, S. C. LB $479,376, 3 bridges and 3.334 mi. paved approaches; the bridges are located at Swamp Creek, Attapulgas Creek and Atlantic Coast Line R.R., FA Proj. No. F-FG-02701 (1) Decatur Co.;

Ga.—**Scott Constr. Co., Inc.**, Box 71, Thomasville, Ga., LB $1,536,978, 1 double and 1 single bridge railroad grade separation structures, 2 double and 1 single bridge hy. grade separation structures and 1 double bridge stream crossing structures Bainbridge By-Pass Rd., Fed. Aid Proj. No. UG-027-2 (3) and U-007-(5). CD 10/1, under Streets and Roads.

▲ **FLORIDA**—State Rd. Dpt., Tallahassee,

Duval Eng. & Constr. Co., Box 1588, Jacksonville, Fla., CA $1,079,280, est. $1,200,000, 4 lane 9 in. c. conc. pavement, b. conc. surf. course and binder course surf. treat. shoulder; drainage structure; 3 concrete slab deck grade separation bridges (streets and 1 railroad) 377.39 ft. with prestressed beams on concrete piles aluminum handrails lighting fencing, removal of bldgs., etc., 1.117 mi. between 26th and Kanmor Sts. in Jacksonville, FAI Proj. No. I-95-5(13) 346 Job No. 720203485 SR 9, Duval Co. CD 9/9, under LB.

▲† **James P. Cross**, Box 827, Iberia, La., CA $1,742,514 constr. Levee 39 and Structure 10, Central and Southern Florida Flood Control Proj., CIVENG-08-123-59-11, FLORIDA, U. S. Eng., Box 4970, Jacksonville, Fla., Bids Sept. 23. CD 10/1, under LB.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
October 28 Indiana October 31 Illinois
November 4 Wisconsin

▲ **O., Cleveland**—BA 11/6—City, Louis L. Drasler, dir. Dpt. P. Serv., City Hall, Zone 14, reconstr. Jefferson Ave. Bridge and approaches from Broadway to W. 3 St. $3,500,000. Plans deposit $100. Trygve & Assoc., 1922 E. 107 St., Zone 6, engrs. CD 8/25/55.

▲ **Ill., Chicago**—EXPOSITION CENTER—BA 11/25—Metropolitan Fair & Exposition Auth., 208 S. LaSalle St., Chicago, Ill. steel, rein.-con., precast exposition center, incl. 350x110 ft. theatre, earthwork, draining, utilities, vehicle tunnel, paving, bridge widening, street lighting. $20,000,000. Plans deposit $1,500. Alfred P. Shaw, 208 S. LaSalle St., Zone 4, archt. CD 7/31/56, under Commercial Buildings.

HEAVY CONSTRUCTION—LB & CA

▲ **ILLINOIS**—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield,

rejected bids Oct. 8, wid'n., resurf. 1.79 mi. U. S. 50 between Ill. Rts. 157 and 111 in East St. Louis, St. Clair Co., LB $211,991; surf. course 2.42 mi. from south of Pocahontas, southerly on FAS 781, Bond Co., LB $84,638; surf. tr. 0.92 mi. from Rend City southerly FAS 1874, Franklin Co., LB $75,942; concrete surf. and concrete paving 3.29 mi. FAS 762 from Wood River, northeast, Madison Co., LB $1,123,419; surf and bridge over Pierce Creek 6.01 mi. from Mt. Vernon northwest, Jefferson Co., LB $484,333. CD 10/13, under LB.

▲ **Geo. D. Hardin**, 2130 S. Michigan Ave., Chicago, Ill. LB $1,467,900 (4 bidders) sanitary sewers, 127 St.

and Indiana Ave., Chicago Calumet treatment works, CHICAGO, ILL. Metropolitan Sanitary Dist. of Chicago, 100 E. Erie St., Chicago 11, Ill. Bids Oct. 9. CD 10/2.

▲ **WISCONSIN**—State Hy. Comn., State Office Bldg., Madison, Bids opened 10/14,

Wis.—**L. G. Arnold, Inc.**, 2011½ N. Dewey St., Eau Claire, Wis., LB **$1,164,873**, (8 bidders), concrete paving 7.326 mi. Hudson-Eau Claire (Hammond-Woodville Section) Road, Interstate Hy. 94, Contr. 1, Proj. I-94-1(29)16, St. Croix Co.; LB **$882,778**, (9 bidders), grade, subbase, Structures C-17-7, B-17-38, 39, 59 and 60, and concrete paving 1.628 mi. Hudson-Eau Claire (Rusk-Elk Mound Section) Road, Interstate Hy. 94, Contr. 1, Proj. I-94-1(23)50, Dunn Co.;

Wis.—**R. R. Birdsall & Sons Co.**, 1025 12 St., Racine, Wis., LB **$365,926** (13 bidders), concrete paving 1.113 mi. North 76 St., West Appleton Ave. to West Grantosa Dr., City of Milwaukee, S. T. Hy. 181, Contr. 1, Proj. DUS 0352(8), Milwaukee Co.;

Wis.—**Ernest & Ben Gottschalk**, Edgar, Wis., LB **$264,196**, (6 bidders), grade, subbase and base 5.39 mi. Wisconsin Rapids-Vesper Road, C. T. Hy. F, Contr. 1, Proj. DS 0579(2), Wood Co., CD 9/25.

BUILDINGS—LB & CA

▲ **Walter Kunz Co.**, Cincinnati-Batavia Pk., Cincinnati (Mount Carmel) O. Owner Builds. **$4,000,000** SHOPPING CENTER, Beechmont Ave., CINCINNATI, O. Federated Department Stores, Inc., 227 W. 7 St., Cincinnati, O., engineering-design. CD 10/10/57.

▲† **Sam P. Wallace Co.**, 2102 Proctor St., Dallas, Tex. LB **$1,918,000**, U. S. Courthouse alterations, incl. air-conditioning, ventilating, lighting equipment, CINCINNATI, O. General Services Admin., 219 S. Clark St., Chicago 5, Ill. W. E. Lawrence, 219 S. Clark St., Chicago 4, Ill., ch. design engr. Bids Sept. 29.

▲ **Kitner Homes, Inc.**, c/o Max Kitner, 4070 Eastway, Cleveland, O. Owner Builds. **$2,000,000**, 100 ranch type HOMES on 62 acre site, east side of Old Route 8, near Route 82, known as Northfield Park Estates, NORTHFIELD, O.

▲ **Adams Monroe Wacker Corp.**, c/o Arthur Rubloff & Co., 100 W. Monroe St., Chicago, Ill., no date for receiving bids or contract set, project still in planning and designing stages for Hartford Fire Insurance Co.'s OFFICE BUILDING bounded by Wacker Dr., Adams, Monroe and Chicago River, CHICAGO, ILL. (**Correction**—report of contract in error). CD 9/30, under CA.

▲ **S. M. Wilson & Co.**, 1616 Cleveland Ave., Granite City, Ill., CA **$1,142,675**, general contr. 1 story, brick, steel, concrete Granite City JUNIOR HIGH SCHOOL, 2300 W. 25 St., 1 story, brick, concrete ELEMENTARY SCHOOL, 4651 Maryville Rd., 1 story, brick, concrete ELEMENTARY SCHOOL, 3201 E. 23 St., 1 story, brick, concrete, ELEMENTARY SCHOOL, 2400 Wilson Ave., GRANITE CITY, ILL. Community Unit School Dist. No. 9, Granite City, Ill. Awarded Oct. 10. CD 9/16, under LB.

▲ **S. M. Wilson & Co.**, 1616 Cleveland Ave., Granite City, Ill., CA **$1,392,093**, general contr. 6 story, brick, steel, concrete 100 bed WING addn. and complete remodeling to existing HOSPITAL, GRANITE CITY, ILL. St. Elizabeth's Hospital, Sisters of Divine Providence, 2100 Madison Ave., Granite City, Ill. Awarded Oct. 10. CD 9/24, under LB.

▲ **J. A. Fredman, Inc.**, 735 Paddock S., Pontiac, Mich., CA **$1,387,590** est. $1,387,000, JUNIOR HIGH SCHOOL, SOUTHFIELD, MICH. Bd. Educ. Southfield P. Schools, Southfield, Mich. Bids Aug. 18. CD 8/5.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

October 30 Missouri — October 31 Kansas

STREETS AND ROADS

October 30 Missouri — October 31 Kansas

HEAVY CONSTRUCTION—LB & CA

▲ **MINNESOTA**—State Hy. Dpt., 1246 University Ave., St. Paul,

Johnson Constr. Co., Box 1002, Litchfield, Minn., CA **$6,718,888**, sand-grav. sub-base, grav. base, plant mixed bit. surf., concrete paving, bridges 6.7 mi. in Bloomington on T.H.C. 94 and between east 86th St. in Bloomington and north limits of Richfield on T.H. 36, Hennepin Co. Bids Sept. 26. CD 10/1, under LB.

▲ **Babcox & Wilcox Co., Boiler Div.**, Barberton, O., CA Est. **$3,000,000**, manufacture and install steam generating equipment, Sutherland Station, MARSHALLTOWN, IOWA, Iowa Electric Light & Power Co., Security Bldg., Cedar Rapids, Iowa.

▲ **KANSAS**—State Hy. Comn., State Office Bldg., Topeka,

rejected bids Sept. 26, concrete base course and b. conc. 0.301 mi. Proj. 73-52 K 1205(2), Levenworth Co., LB **$92,977**, CD 10/1, under LB; concrete paveing 1.984 mi. Proj. 40-105 F 084-1(4), Wyandotte Co. LB **$1,105,988**. CD 10/1, under LB.

▲ **KANSAS**—State Hy. Comn., Kansas City, Bids opened 10/9,

Kan.—J. A. Tobin Constr. Co., 3701 Rainbow Blvd., Kansas City, Kan., LB **$1,153,908** (3 bidders), concrete paving 3.023 mi. beginning on Johnson-Wyandotte Co. line SP 35-46 I 35-3 (16) 227 Pts. I & II, Johnson Co.; LB **$455,961** (3 bidders), concrete paving 0.793 mi. beginning Wyandotte-Johnson Co. line SP 35-105 I 35-3(17)230, Wyandotte Co.;

Kan.—Clarkson Constr. Co., Box 4924, Sta. 7, Kansas City 1, Mo., LB **$169,851** (3 bidders), grading 5.387 mi. beginning at jct. with old location US 50 approx ½ mi. north and ½ mi. east of Lenexa; west on County Hy. Co. Proj. 46 S 966 (3), Johnson co. CD **9/25.**

▲ **TEXAS**—State Hy. Comn., Austin, Bids opened 10/14,

Tex.—Cooper & Woodruff, Inc., 204 Mays Bldg., Amarillo, Tex. LB **$636,528**, grade, etc. 20.019 mi. Hy. US 62 and 82, Proj. F 443 (29) & F 443 (30) Lubbock and Crosby Counties; LB **$1,070,309**, grade, etc. 16.199 mi. Hy. US 287, Proj. F 523 (8) & F 438 (31), Armstrong Co.;

Tex.—J. C. McLaughlin, P.O. Box 1149, Bryan, Tex. LB **$106,657**, grade, etc. 0.453 mi. Hy. SH 124, Proj. F 749 (2), Chambers Co.;

Tex.—Tucker & Stephens Constr. Co., P.O. Box 898, Graham, Tex. LB **$233,252**, grade, etc. 10.467 mi. Hy. FM 730 & 2378, Proj. S 1537 (3) & S 2162 (1), Wise Co.;

Tex.—Gilvin-Terrill, Inc., P.O. Box 2268, Amarillo, Tex. LB **$474,911**, grade, etc. 24.615 mi. Hy. US 60, Proj. F 421 (10), Potter and Carson Counties;

Tex.—Markham & Brown, 1961 N. Industrial Blvd., Dallas, Tex. LB **$916,259**, grade, etc. 1.974 mi. Hy. IH 45, Proj. I 45-3 (15) 248, Ellis Co.;

Tex.—Strain Bros., Inc., P.O. Drawer 1631, San Angelo, Tex. LB **$109,593**, b. conc. 8.091 mi. Hy. US 62, Proj. F 1104 (8), Hockley Co.;

Tex.—Texas Bitulithic, Box 10365, Dallas, Tex. LB **$823,851**, resurf. N. Lane, curb Medians, etc. 12.292 mi. Hy. SH 183, Proj. U 634 (22) & F 634 (23), Tarrant Co.;

Tex.—Trotti & Thompson, Inc., Box 70, Beaumont, Tex. LB **$898,977**, grade, etc. 0.851 mi. Hy. IH 10, Proj. I 56 (16) Or I 10-8 (3) 858, Jefferson Co.;

Tex.—Maupin Constr. Co., P.O. Box 6476, San Antonio, Tex. LB **$155,781**, grade, etc. 9.265 mi. Hy. FM 608 & 419, Proj. C 53-15-7, C 983-3-2, Nolan Co.;

Tex.—Callan Constr. Co., P.O. Box 3146, Waco, Tex. LB **$335,066**, grade, etc. 9.856 mi. Hy. FM 1702 & 1476, Comanche and Erath Counties;

Tex.—J. M. Dellinger, Inc., Box 4227, Corpus Christi, Tex. LB **$266,820**, flex. base shoulders, etc. 15.332 mi. Hy. US 182, Proj. F 1014 (6) Goliad Co.;

Tex.—E. B. Darby & Co., Inc., Box 467, Pharr, Tex. LB **$354,381**, addnl. base, 2 course surf. treat., etc. 12.11 mi. Hy. US 281, Proj. F 2 (7) Brooks Co.;

Tex.—Williams Bros. Constr. Co., Inc. & Schwope Engineering Constr. Co., P.O. Box 15066, Houston, Tex., LB **$249,813**, grade, etc. 0.136 mi. Hy. IH 45, Proj. I 45-1 (16) 50, Harris Co.;

Tex.—John F. Buckner & Sons, P.O. Box 76, Cleburne, Tex. LB **$389,055**, wid'n., grade, etc. 10.867 mi. Hy. SH 171, Proj. S 127 (3) & S 886 (6), Hill and Limestone Counties;

Tex.—McElwrath Bros., 918 Manor Dr., San Antonio, Tex. LB **$103,649**, grade, etc. 6.773 mi. Hy. FM 1937, Proj. S 2160 (1) Bexar Co.;

Tex.—F&C Engineering Co., P.O. Box 2426, Houston, Tex. LB **$399,872**, grade, etc. 1.06 mi. Hy. US 69, Proj. F 1043 (3) Jefferson Co.;

Tex.—Collins Constr. Co. of Texas, Box 1192, Austin, Tex. LB **$311,787**, hot mix b. conc. etc. 8.371 mi. Hy. US 81, Proj. F 128 (7) Montague Co., all foregoing CD 9/25;

Tex.—McMillin-Burkett Constr. Co., P.O. Box 1161, Texarkana, Tex. LB **$249,286**, hot mix b. conc. 20.061 mi. Hy. US 82, Proj. C 46-5-15 & C 46-6-15, Bowie Co.;

Tex.—Reynolds & Williams, Box 88, Tyler, Tex. LB **$246,644**. b. conc. various hys. Proj. C 10-8-25, etc. Morris, Cass and Bowie Counties;

Tex.—Hugh McMillan, Inc., Box 1612, El Paso, Tex. LB **$974,273**, flex base, etc. 10.396 mi. Hy. IH 10, Proj. I 10-1 (8), 0, El Paso Co.;

Tex.—F. C. Herring, Kurten, Tex. LB **$79,425**, recondition base, etc. 15.459 mi. Hy. FM 2293 & 2096, Proj. C 2134-1-2 & C 1954-1-3, Robertson Co.;

Tex.—Joe Davidson, Box 439, Terrell, Tex. LB **$123,127**, grade, etc. 1.842 mi. Hy. FM 1778 & 1377, Proj. R 1735-1-3 & C 1391-1-7, Collin Co.;

Tex.—Bryan & Hoffman, Box 390, Plainview, Tex. LB **$281,580**, base, surf., etc. 21.419 mi. Hy. FM 267 RM 1919 and FM 1594, Proj. R. 2164-2-2; R 1523-2-2 and R 1514-1-5, Foard Co.;

Tex.—Ernest L. Mays, 3430 Minglewood St., Beaumont, Tex. LB **$148,695**, roadbed, treat. etc. various hys., Proj. C 24-1-14, etc., Jasper and Orange Counties;

Tex.—Heidenfels Bros., P.O. Box 1917, Corpus Christi, Tex. LB **$101,666**, b. conc. 5.541 mi. Hy. US 77 and Loop 295, Proj. C 373-1&8-12&1, Nueces Co.;

Tex.—J. O. Boswell, 311 Paris Ave., Lubbock, Tex. LB **$703,285**, grade, etc. 8.851 mi. Hy. US 62. Proj. F 1104 (6) Lubbock Co.;

Tex.—Cage Bros., 6959 San Pedro St., San Antonio, Tex. LB **$597,335**, grade, etc. 6.335 mi. Hy. US 281, Proj. F. 1011 (4), Hamilton, Coryell and Lampasas Counties;

Tex.—Luce Constr. Co., P.O. Box 1799, Vernon, Tex. LB **$215,573**, grade, etc. 7.059 mi. Hy. US 183, Proj. S 2147 (2) Throckmorton Co.;

Tex.—Schwope, Inc., 6623 W. Commerce St., San Antonio, Tex. LB **$257,036**. wid'n, wid'n base, etc. 21.573 mi. Hy. US 277, Proj. S 752 (4) & S 752 (5) Maverick Co., all foregoing CD 10/2;

Tex., cancelled bids to have opened Oct. 14, grade, etc. 2.792 mi. Hy. SH 35 & Loop 70, Proj. C 180-4-26 & C 180-7-6, Aransas Co. CD 10/2.

▲ **The E. E. Co. Inc.**, 902 State St., Houston, Tex. LB **1,220,853**, Alt. 1 Memorial Drive Extension Bridge Proj., HOUSTON, TEX. City, City Hall, Houston, Tex. Bids Oct. 8. CD 10/1;

George Constr. Co., 3816 Fannin St., Houston, Tex. LB **$1,336,222**, Alt. 2, (Houston, Tex.)

▲† **Chicago Bridge & Iron Co.**, 550 W. 17th St. S., Salt Lake City, Utah. CA **$4,624,100**, penstocks tunnel-liner and surge tanks for 2nd power plant at Fort Peck, ENG-32-015-58-9, MONTANA. U. S. Eng., Glasgow, Mont. Bids Sept. 10. CD 9/16, under LB.

BUILDINGS—LB & CA

▲ **Ace Constr. Co., Inc.**, 241 Van Buren Ave. N., Hopkins, Minn., CA **$1,000,000** general constr. three 3 story APARTMENTS, 22 units in each, and 5 story bldg. of 80 units remodel existing 3 story bldg. to have 30 units Essex and streets, Southeast, MINNEAPOLIS, MINN. Universal Realty Co., c/o B. Gingold & Assocs., archts., 633 Metropolitan Bldg., Minneapolis, Minn.

▲ **The Ballwin Plaza Corp.**, c/o Charles Kahn, 314 N. Broadway, St. Louis 1, Mo., Owner Builds, Over **$2,000,000**, 152,413 sq. ft. Ballwin Plaza SHOPPING CENTER, on 13.6 acre tract Hy. 100, Manchester Rd. west of city limits to incl. 33 retail stores, medical unit for 5 doctors and parking for 1,250 cars, BALLWIN, MO. Rathert & Roth, 4401 Hampton Ave., St. Louis 9, Mo., archts.

▲ **Lecoutour Constr. Co.**, 1419 Hampton Ave., St. Louis 10, Mo., LB **$1,271,900** (12 bidders), HHFA Proj. MO-23-CH-44(D), general constr. 11 story, ground floor, brick, cut stone, steel, concrete, etc. STUDENT RESIDENCE, Scott and Euclid Aves., ST. LOUIS, MO. Washington University, Lindell and Skinker Blvds., St. Louis 5, Mo. Jamieson, Spearl, Hammond & Grolock, 1876 Arcade Bldg., St. Louis 1, Mo., archts. Bids Oct. 3. CD 9/5.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

November 12, 13 California

STREETS AND ROADS

November 4 Idaho — November 12, 13 California

▲† **Calif., Point Mugu**—TEST BUILDING, etc.—BA 11/13—Eleventh Naval Dist., 1220 Pacific Hy., San Diego, constr. component test building and utilities at Naval Air Missile Test Center, Spec. 19493-58. $1,000,000-$2,500,000. CD 9/17/57.

▲ **Calif., Oakland**—BA 12/12—East Bay Municipal Utility Dist., 2130 Adeline St., constr. Upper San Leandro Filter Plant Expansion in East Oakland. $4,500,000. CD 6/9.

▲† **Wash., Bremerton**—DRYDOCK—BA 12/17—P. Wks. Officer, Puget Sound Naval Shipyard, Bremerton, 188x1,150 ft. drydock, Over $20,000,000. Plans deposit $400. Moran, Proctor, Mueser & Rutledge, 420 Lexington Ave., New York, N. Y., engrs. Carey & Kramer, 1917 1 Ave., Seattle, assoc. engrs. CD 1/9/57.

BUILDINGS—BA

▲ **Calif., Whittier**—SCHOOL—BA 11/6—Whittier Union High School Dist., 12100 E. Washington Blvd., constr. High School No. 6, Washington and Pioneer Blvds., Los Nietos. $1,600,000. CD 2/13.

HEAVY CONSTRUCTION—LB & CA

▲ **NEVADA**—State Hy. Dpt., State Hy. Bldg., Carson City,

Silver State Constr. Co., Fallon, Nev. CA **$1,349,737** (10 bidders), portion Int. Hy. Sys. 4.265 mi. Int. Hy. 80 (US 40) between 15¾ mi. and 20 mi. east of Sparks, Proj. I-080-1 (11) 32, State Hy. Contr. 1043, Washoe Co., CA **$264,935**, portion State Hy. Sys. 9.716 mi. State Rte. No. 3 between Calif.-Nev. State Line and 11 mi. west of Lida, Esmeralda Co. Bids Oct. 7. CD 9/24.

CANADA

HEAVY CONSTRUCTION—LB & CA

▲ **Henry J. Kaiser Co. of Canada Ltd.**, Dominion Square Bldg., Montreal, Que., **McNamara Constr. Ltd.**, 42 Industrial St., Toronto, Ont. and the **Tower Co. Ltd.** 1509 Mckay St., Montreal, Que., CA **$3,973,350**, constr. hydrant refuelling installation, incl. various bldgs. and services at Air Force Base; CA **$2,441,600** (49 bidders) runway exten., taxiway and parking aprons and airport lighting facilities, at Air Force Base, FORT CHURCHILL, MAN. Defence Construction (1951), 56 Lyon St., Ottawa, Ont. CD 10/2, under LB.

BUILDINGS—LB & CA

▲ **Geo. A. Crain & Sons, Ltd.**, 555 Cambridge St., Ottawa, Ont., LB **$4,673,968** (15 bidders) 3 ADMINISTRATION OFFICE BLDGS., connected by common bsmnt., 9 story plus penthouse, 75 x 277 ft., 2 story, 74 x 337 ft. and 1 story, 146 x 146 ft., OTTAWA, ONT. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids Oct. 8. CD 9/22.

▲ **Canit Constr. Ltd.**, 360 Place Royale, Montreal, Que., CA **$4,999,322**, three 12 story and one 14 story Jeanne Mance LOW RENTAL HOUSING, on site bounded by St. Dominique, Ontario, Sanguinet Sts. and rear of St. Catherine St., MONTREAL, QUE. City, Central Mortgage & Housing Corp., 160 Ontario St. E., Montreal, Que. Bids Sept. 25, awarded Oct. 8, CD 9/11;

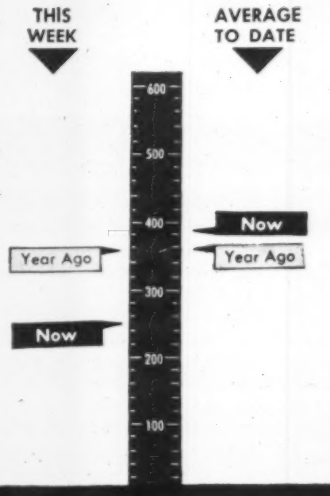
Alphonse Gratton, Inc., 1439 St. Matthew St., Montreal, Que. CA **$1,478,539**, nine 3 story and one 2 story Jeanne Mance LOW RENTAL HOUSING on site bounded by St. Dominique, Ontario, Sanguinet Sts. and rear of St. Catherine St. (Montreal, Que.)

(Proposal Advertisement see pp. 87 to 90)

Construction Scoreboard

ACTIVITY THIS WEEK

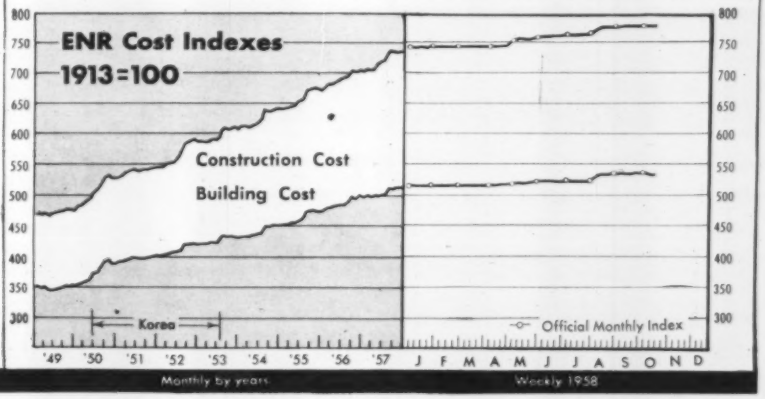
Contract Awards
Millions of Dollars



COST INDEXES AS OF NOW

ENR INDEXES (1913=100), 20-cities' average	Week of Oct. 16 1958	% Change from Sept. 18 1958	% Change from Oct. 17 1957
Construction Cost	775.05	−0.08	+5.16
Building Cost	536.34	−0.01	+3.82

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518



AMOUNT OF CONTRACTS LET

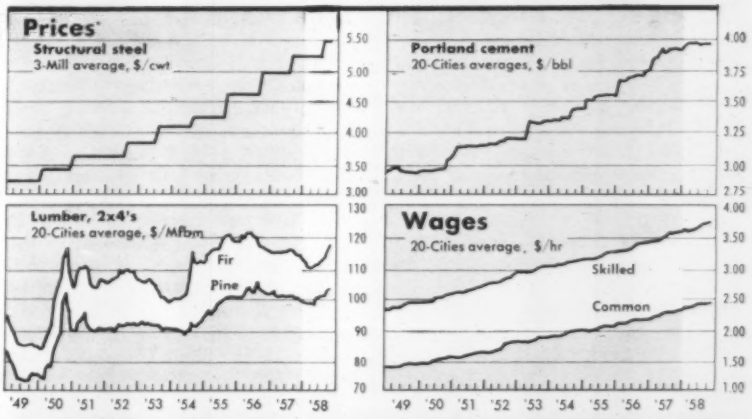
By Ownership	This Week millions	Cum. 43 wks 1958 millions	Chge '57-'58 %
All Heavy Constr.	$251.4	$16,428.0	+7
Private	103.8	6,631.7	−8
Public	147.6	9,796.3	+19
State & Municipal	120.8	7,248.5	+16
Federal	26.8	2,541.8	+27
By Type of Work			
Public			
Waterworks	5.3	263.4	−11
Sewerage	14.4	512.1	+11
Bridges*	9.8	606.7	+1
Highways	64.5	3,062.5	+20
Earthwork, Waterways	22.5	925.6	+4
Buildings, Excl. Housing	25.3	2,238.7	+16
Housing	1.0	976.7	+71
Unclassified	4.7	1,220.7	+32
Private			
Mass Housing	64.1	3,207.0	+25
Commercial	16.1	1,562.1	+8
Industrial	21.3	1,496.6	−45
Unclassified	2.4	355.9	−24

* Includes private bridges.

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

NEW CAPITAL FOR CONSTRUCTION

	Week of Oct. 16 millions	Cum. 42 wks 1958 millions	Chge '57-'58 %
Corporate Securities	$53.0	$4,363.0	−9
State and Municipal:			
All Except Housing	60.8	5,170.4	+16
Housing	...	114.5	−27
Federal Loans	3.5	165.7	−5
Federal Aid	...	2,596.2	+20
Total Nonfederal	$117.3	$12,409.9	+6
Federal Appropriations:			
Projects in U. S.	...	$3,946.1	+42
Outside U. S.	...	35.2	+21
Total New Capital	$117.3	$16,391.1	+13



ENR COST INDEXES IN 22 CITIES, 1913 = 100

City	Construction Cost Oct. 1958	Construction Cost Percent Change from last Month	Construction Cost Percent Change from last Year	Building Cost Oct. 1958	Building Cost Percent Change from last Month	Building Cost Percent Change from last Year
Atlanta	584	0	+6.5	472	0	+3.5
Baltimore	708	0	+5.7	534	0	+2.6
Birmingham	619	+3.3	+9.3	493	+0.9	+5.0
Boston	801	−1.0	+4.0	541	−1.2	+2.3
Chicago	861	+0.4	+2.9	563	+0.7	+6.5
Cincinnati	780	0	+4.3	519	0	+3.0
Cleveland	880	+0.8	+2.3	533	+1.2	+1.3
Dallas	573	0	+4.9	469	0	+4.0
Denver	731	0	+2.8	530	0	+1.6
Detroit	892	+0.4	+7.4	576	+0.6	+5.8
Kansas City	768	0	+3.5	533	0	+3.3
Los Angeles	828	+0.8	+6.4	534	+1.2	+4.1
Minneapolis	824	−0.1	+4.5	553	−0.2	+2.9
New Orleans	609	+1.2	+4.9	492	+1.5	+3.2
New York	953	0	+7.1	622	−0.1	+5.0
Philadelphia	803	0	+3.6	581	0	+3.5
Pittsburgh	822	−0.7	+3.9	590	−0.5	+3.4
St. Louis	850	+0.2	+6.7	569	+0.3	+4.2
San Francisco	819	−0.1	+7.6	539	+1.2	+6.4
Seattle	801	+0.3	+6.0	486	+0.5	+4.0
U. S.—20 Cities' avg.	775	+0.2	+5.2	537	+0.3	+3.8
Montreal	603	0	+2.0	449	0	−0.1
Toronto	619	−0.4	+1.7	466	−0.6	−1.0

Housing Officials' Renewal Target

Housing officials seek $6 billion in federal grants; want U. S. share of project cost hiked to 80%

A $6 billion, 10-year urban redevelopment program was demanded last week by the National Association of Housing and Redevelopment Officials. The 1,200 delegates, meeting in San Francisco, also voted overwhelmingly for boosting the federal share of net project costs for renewal projects to 80%. The government now assumes two-thirds of the cost. The Administration in the past has urged a reduction to 50%.

The $6 billion program and the 80% share of cost were the key resolutions adopted by the association. Others were:

- Elimination of the residential requirements in Title I of the Housing Act of 1949, as amended.
- Simplification of requirements of a community's urban renewal plan.
- Granting authority to HHFA for making temporary loans, in advance of the capital grant, for project activities not dependent on existence of an urban renewal plan.
- Permit communities to count as their share of non-cash local grants-in-aid, public improvements that have been started not more than five years before federal approval of a renewal project in the area.
- Federal financial assistance for preparation of community renewal programs.
- Make eligible for relocation payments all individuals, families and businesses displaced from an urban renewal area.
- Establishment of a Department of Housing and Community Development at Cabinet level.

The resolutions said the $6 billion federal capital grant program should be authorized for a 10 year period in the amount of $600 million yearly. Noting that the urban renewal program is faced with a critical capital grant shortage for the third time in two years, the resolution states, "It is ironic that continued existence of the urban renewal program is threatened at a time when Congress, the Administration, and political, business, labor and civic leaders . . . recognize the need for an urban renewal program on a continuing basis."

The series of resolutions climaxed four days in which the housing officials blamed the lag in urban redevelopment on cumbersome laws, Congress' failure to supply sufficient funds and public apathy. Most of the criticism was aimed at the federal government and Congress.

Even Albert M. Cole, Administrator of the Housing and Home Finance Agency, took a shot at the inadequacy of funds provided by the federal government.

Only one major speaker, Joseph P. McMurray, New York State's Housing Commissioner, pointed out that the state governments themselves were generally failing in their duty to support renewal and rehabilitation in the nation's communities; but he too called for more federal assistance.

At almost the same time that the nation's top housing officials and experts were generally accusing the federal government of failing in its responsibility, a U. S. Senator was pointing his finger in another direction.

Sen. Prescott Bush (R-Conn.) told the American Society of Civil Engineers in New York City that, with few exceptions, the states are remiss in their responsibility to urban redevelopment.

Senator Bush told ASCE, "We hear a great deal spoken on the Senate floor about 'states' rights.' But states' rights carry with them states' responsibilities. If the states do not accept their responsibilities, their rights will wither away."

• Backs less federal aid—Supporting Administration proposals that the federal share of the cost of urban renewal projects be cut from the present two-thirds to 50% starting in 1961, Senator Bush mildly scored mayors of cities who strongly opposed the idea at Congressional hearings. The Senator said he could not entirely agree that cities cannot afford "a modest increase in their contributions to urban renewal programs, which are of such great direct benefit to themselves."

He conceded, however, that if the federal share of cost should be gradually reduced, "the greater part of the corresponding increase in the local contributions should be borne by the state governments."

He cited Connecticut as one state that pays half the city cost of urban renewal and redevelopment.

• New York's viewpoint—At the San Francisco session, Commissioner McMurray told the housing officials that New York State soon may be providing aid to communities for urban redevelopment. This will depend, however, on the voters in November who must act on a proposition that would provide for $25 million in state aid. Should it win approval, the state will meet half the local contribution cost.

Mr. Cole, although expressing dissatisfaction with present federal government housing programs, said he was optimistic about the chances of Congress passing a new and better housing and urban redevelopment bill next year. He told the group that in addition to improved federal legislation, there also must be more citizen participation. He cited Cleveland, Kansas City, Oakland, Norfolk and Little Rock as outstanding examples of what urban redevelopment can accomplish with citizen participation.

But Washington, D. C., was considered by Mr. Cole "the other side of the coin, where initiative and enterprise has been strangled by oxcart procedures."

• Total requirements—On the basis of some figures later cited by Commissioner McMurray, it would appear that more will be required to do a complete job than improved processes and citizen participation. Mr. McMurray's figures were astronomical even in these years of $79 billion federal budgets.

He said that $425 billion should be spent in the next 10 years for private and public housing and urban renewal programs. According to the New York State Housing Commissioner, it will cost that much to do the following:

- Replace and rehabilitate deteriorated housing in both urban and rural areas.
- Furnish neighborhoods with streets, sewers, schools and parks.
- Provide new and decent housing for migrating and growing populations.

Mr. McMurray said that the figures should not be "frightening," but, rather, should serve as a lever to start the nation's governments on a "specific program to overcome the needs, piece-by-piece, in one neighborhood after another."

It was then he urged increased federal

Gets Bigger

assistance, "because no city will be able to afford contributions necessary under the present formula of two dollars of federal aid for each dollar of local contribution.

"No matter how we measure the size of the job, we need a program—at the very least—two times as large as anything that is being done at the present time. And I mean two times as large as the urban renewal program and double the number of annual housing starts of all kinds."

He said the entire Federal Housing Administration program, "which has been added to by bits and pieces, ought to be reorganized and reoriented to our current needs."

In addition, Mr. McMurray urged overhaul of the whole housing mortgage credit structure "so that it can function on its own as a full-grown member of the monetary market organization." This could be accomplished by creating a central mortgage credit market, he said.

• **Local viewpoints**—Representatives of local communities also expressed their ideas of what is required to give urban redevelopment a boost. Mayor George Christopher of San Francisco, president of the American Municipal Association, asked NAHRO to step up educational programs that could be used at the local level to overcome apathy and enlist the full support of the population.

He said municipal administrators should set up feasible renewal programs and resist pressures by property owners aimed at stalling them.

Isadore Candeub of Candeub and Fleissing, urban renewal consultants, Newark, N. J., said renewal and redevelopment programs will never solve community housing problems until the federal government adopts a continuing, well-financed program for slum clearance.

Mr. Candeub said most communities have not accomplished both long-range planning and neighborhood analysis; one or the other perhaps, but not both, and each, he pointed out, is essential if a redevelopment program is to be successfully completed.

John R. Searles, Jr., executive director of the Washington, D. C. redevelopment agency, was elected NAHRO president. He succeeds Philip F. Tripp, executive director of the New Bedford, Mass., housing authority.

New Face for Lower New York

New York's lower Manhattan, which takes in the Wall Street financial district, is candidate for an estimated $1 billion redevelopment and rehabilitation program. The plan was drawn up by the Downtown-Lower Manhattan Association; it was given to Mayor Robert F. Wagner last week. New York City's Board of Estimate will consider it this week.

No time estimate is placed on the program.

The proposals, including public and private work, would bring sharp changes within the 564-acre area encompassing the financial center of the world.

The following improvements are projected:

• Razing most of the outmoded structures to permit expansion of the financial district and other forms of redevelopment.

• Closing many of the narrow streets by assembling the land for housing and industrial use.

• Widening other streets to create an interior traffic loop.

• Replacing some piers along the East River with a heliport and small boat marina.

• **Two areas**—The plan calls for two redevelopment areas; one on the east side and the other on the west side of the island's lower portion.

The west side section would extend south from Canal to Cortland Streets, a distance of about 20 blocks and ranging in depth from one to four blocks. The east side section would extend south from Brooklyn Bridge and end at about Battery Park. This too would include about 20 blocks, with a depth of from five to two blocks, exclusive of pier area also to be redeveloped.

• **Three basic elements**—The plan, based on studies made by Skidmore, Owings & Merrill, New York City architects-engineers, is designed to accomplish three things: improve traffic flow; organize economical land use; and designate specific areas for redevelopment. These are "basic to further progress," the report states.

The report also explains that "pending discussion, cost studies and positive action by the city, we have deliberately omitted . . . the form of future redevelopment, the means for its realization and costs involved."

The $1 billion cost estimate is unofficial.

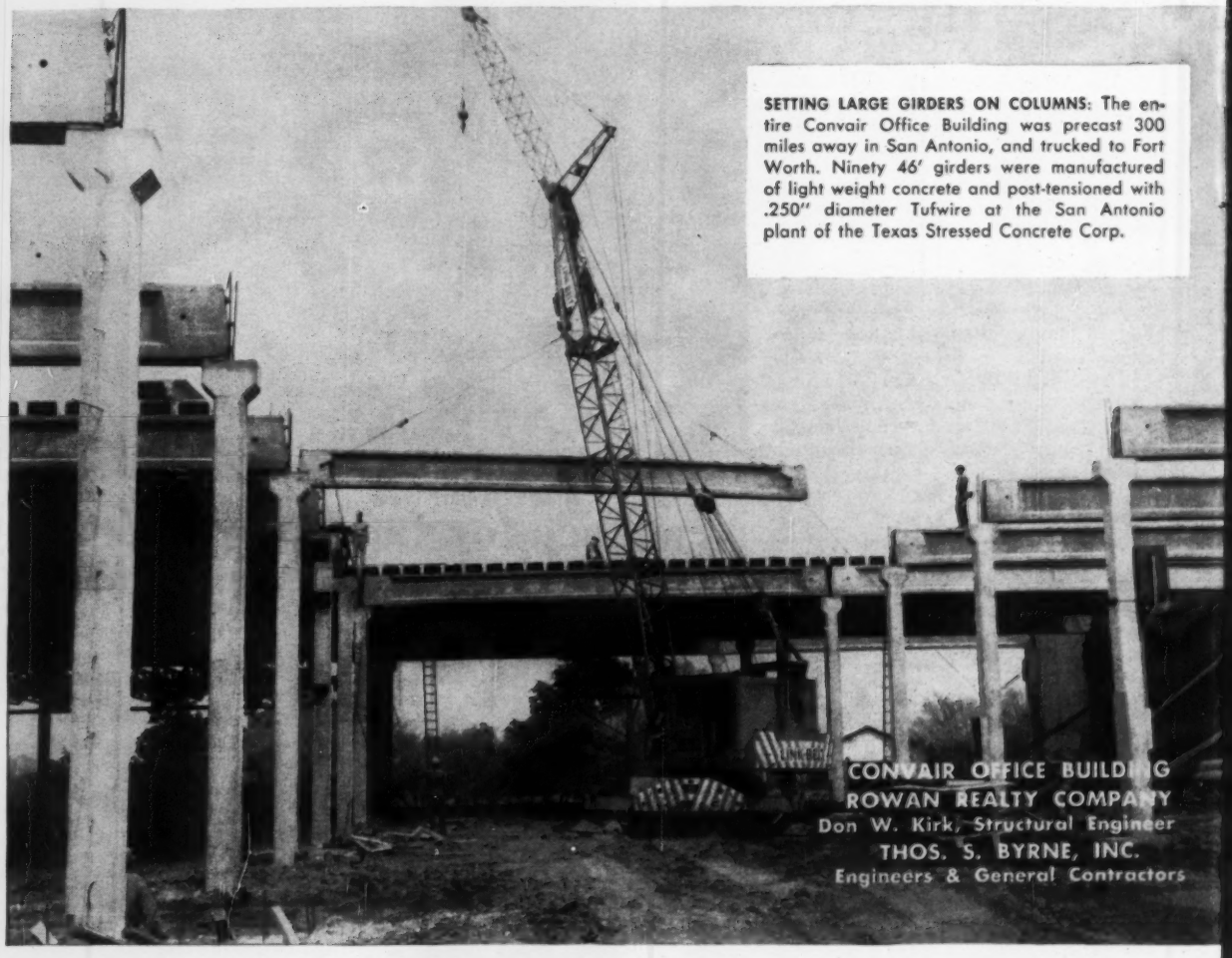
The area would be rezoned into four classifications: general commercial, heavy commercial, light industrial and residential.

Each of these zones would be a sharply defined and unified area, although the report emphasizes that the suggestions are only a "broad outline subject to further review and modification in the light of future developments."

David Rockefeller, vice chairman of Chase Manhattan Bank, is chairman of the association and John D. Butt, chairman and president of Seamen's National Bank, is association president.

(B&F continued on page 80)

Prestressed Concrete Building



SETTING LARGE GIRDERS ON COLUMNS: The entire Convair Office Building was precast 300 miles away in San Antonio, and trucked to Fort Worth. Ninety 46' girders were manufactured of light weight concrete and post-tensioned with .250" diameter Tufwire at the San Antonio plant of the Texas Stressed Concrete Corp.

Products Manufacture and Erection: Texas Stressed Concrete Corporation, San Antonio, Texas

Completed in 4 Months — Despite Record Rains

The rains came. For 22 days the construction business in Fort Worth, Texas, slogged through a deluge that meant delays ranging from slow-downs to shut-downs. You can't pour concrete in the rain.

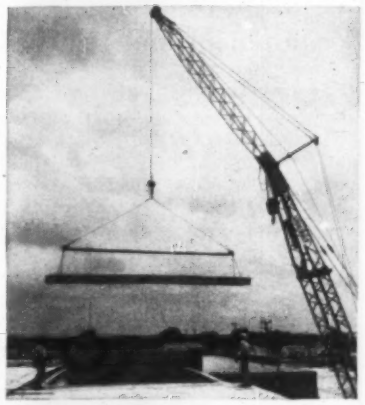
In the midst of this, an outstanding advantage of prestressed concrete construction was dramatically demonstrated — speed of erection even under adverse conditions.

The 102,000 sq. ft. Convair office building and warehouse is the case in point. The prestressed concrete structural members were erected in 13 working days — rain or no rain. The building was complete—offices, air-conditioning and all — in less than four months.

Speed of erecting is only one of many advantages that make prestressed concrete the miracle building material. Others are: great strength-to-weight ratio; less concrete needed; greater recovery after overloads; thinner sections; on schedule transportability of prestressed members; longer spans; permanence of concrete PLUS amazing flexibility and elimination of cracking; adaptability as unlimited as the imaginations of architects and engineers. Today, prestressed concrete is being used in a range of applications from fence posts to giant bridges and multi-story buildings; from movable parking lot curbs to airport runways.

Advances in the development of better high tensile strand and wire by Union Wire Rope Corporation have contributed heavily to the booming trend to prestressed construction. Once the problem of dependable tensioning materials was whipped, the way was opened wide for the "new age of concrete."

Erected In Only 13 Days



CLOSE-UP OF DOUBLE TEE BEING SET: Tuffy Slings were used as shown in placing 920 of these 4' double tee slabs. Slabs were made from lightweight concrete using Union Wire Rope "Tufwire" strand.

BUILDING ALMOST CLOSED IN: Work progresses steadily in the dreary rain as another double tee is hoisted into position. The roof structure was designed for parking. It was given a thick asphalt wearing surface.

LAST OF THE DOUBLE TEES ARE HOISTED FROM TRUCK completing roof for asphalt surface.

How Will You Share in Vast New Markets Opening For Prestressed Concrete Makers?

Looking for a new route of expansion? Want to get in on an industry that's expanding at a tremendous pace every year, with a future of fantastic dimensions? Prestressing offers opportunities not only to the on-site contractor, but also to the contractor who would like to operate a permanent casting yard as an arm of his business or as a commercial fabricator. Here are some of the opportunities:

OPPORTUNITIES in Buildings: Structures of just about every description are being built better with prestressed concrete. Office buildings, garages, warehouses, schools, motels, hospitals. Now the walls of multi-storied buildings are being poured in big slabs with openings for doors and windows, then tilted up to position. Floors are poured in "layers" separated by greased paper, then raised to upper floor levels.

OPPORTUNITIES in Bridges: The tremendous National Highway Program now under way calls for 300,000 bridges, most of which can be built much faster and more economically with prestressed concrete than with any competitive building material. Other bridges ranging from a small creek crossing to the world's longest highway bridge are built of prestressed concrete.

OPPORTUNITIES in Highways: Prestressed concrete pavement is already in the advanced experimental stage. The slabs need be only 5 inches thick, as contrasted with the ordinary 10-inch slabs used on many highways. They promise high levels of strength and permanence, speed of construction, savings in time and money. And more profit for suppliers and contractors.

These are just a few of the many uses where concrete prestressed with Union Tufwire strand and wire is proving its structural and economic advantages. Almost anything that concrete will do — it will do better when prestressed with Union Tufwire.

If you're a present user of prestressed concrete, or engaged in making it, let our engineering department and research laboratory give you and your consulting engineers a lift with any prestressing project.

If you're among those who see the big opportunity for a new plant to supply your area, let us help you explore the possibilities.

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Tufwire®

Stress-Relieved Wire and Strand

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Freight Rates: Changes Coming

Outcome of rail rate fight will have direct bearing on price of construction equipment and materials

Truckers and railroads are in a fight that strikes at the core of the feud over freight rates. The outcome, still a year or two away, will have a direct dollars and cents meaning to every shipper.

The issue revolves around a growing trend among railroads to junk the traditional method of basing freight charges largely on the value of the commodity hauled. Instead, they want to charge primarily on weight, regardless of content. It results in an impressive cut in freight charges. In the trade, the new rates are known as "volume, all-commodity rates."

Truckers, however, are fighting hard to keep the rails from making the switch. They claim the trend toward the volume basis for rail freight charges threatens the trucking industry's entire existence.

One of the most outspoken representatives, the Eastern Central Motor Carriers Association, Inc., has filed a multi-charge blast with the Interstate Commerce Commission at some 22 of the nation's railroads and an equal number of leading freight forwarders. The association wants the ICC to conduct a master investigation of volume rates and knock most of them out.

Under immediate attack by the motor carriers are all-commodity railroad rates based on hauling a pair of loaded truck trailers on a flat car using a 70,000 lb minimum weight basis.

In addition, the truckers have called on the ICC to knock out over 300 volume rates now being used by freight forwarders. The rates apply to such items as machinery, power shovels, cable and tractors.

The rate-making trend started after World War II when railroads began hauling loaded truck trailers on rail cars for a flat fee regardless of the commodities inside the trailers.

This summer the commission allowed railroads to offer rates based on volume shipments of 70,000 lb using a pair of trailers on a flat car. This is roughly equivalent to two boxcars, and it's a sharp jump over the traditional carload rate based on a 30,000 lb minimum.

The next move came in August. The Baltimore and Ohio, New Haven, and the Lehigh Valley Railroads asked the ICC to okay a similar 70,000 lb minimum rate for all-commodities, not for hauling truck trailers, but rather on a straight two-boxcar basis.

Truckers, however, won an ICC suspension of the rates until next March 14. Now the motor carriers want an all-inclusive investigation to get a once-and-for-all settlement of all volume rates. In addition, the truckers want the ICC to crack down on freight forwarders and prevent them from using the rail rates to compete with the truck lines.

Freight forwarders lump several small shipments together and ship them in carload lots. With lower rates based on larger volumes, the forwarders are now in a position to compete effectively against the truckers. Big shippers can tap the volume rates on their own.

There is real economy for shippers in the rail move to volume shipments. For example, in the B&O's rate request, based on a 70,000 lb minimum two-boxcar basis, the per 100 lb rate on a shipment from New York City to Chicago amounts to 64.5 cents. The current rate, based on a 30,000 lb minimum, brings the same 100 lb charge to $2.02 for the same haul. This is regardless of the commodity shipped as long as one item doesn't account for more than 60% of the total weight.

The truckers claim they will be forced out of business if the rails win the fight. They can't compete on a straight tonnage basis. The railroads think they have the newly passed Transportation Act of 1958 on their side. If volume rates can give them a profit, the rails say, they should be allowed to use them, regardless of whether those rates hurt another form of transportation.

Louisville Urban Renewal Clears First Court Hurdle

A $5 million bond issue for urban redevelopment in Louisville, Ky., has won its first court test. Circuit Court Judge Stuart E. Lampe held that all constitutional and statutory requirements are met.

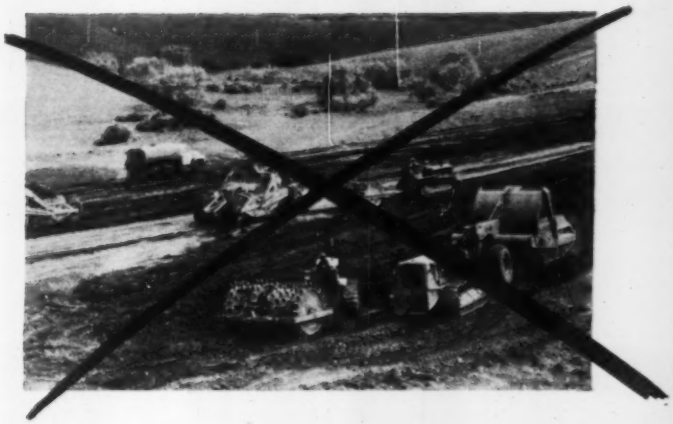
The court action also questioned whether the city had the right to transfer its authority to condemn private property to an urban redevelopment agency or any other agency. In addition, it was asked whether public funds could be used to condemn property that had been selected for renewal for resale to private interests (ENR Oct. 16, p. 182).

The issue now goes to the Court of Appeals for final legal clearance.

(B&F continued on page 82)

HOW YOU CAN:

- **speed-up fill compaction**
- **reduce equipment congestion**
- **handle scattered dozing at lowest cost**



With the big yardages hauled by today's larger capacity earthmovers, you stand to lose profits if you must delay hauling cycles to allow time for specified compaction. These delays may be caused by: 1) inefficient compaction tools; or, 2) too many slow-moving dozers, graders, and compaction units working in such a small area that they get in the way of your production units.

To solve this problem — and automatically reduce your equipment investment — you can replace slow-speed dozers and tow-tractors with fast, heavy-duty, rubber-tired LeTourneau-Westinghouse Tournatractor®. Here's how this multi-purpose 210-hp tractor can help you speed-up dozing and compaction . . . and *save you money.*

1. Works fast . . . compacts more fill per day — Powerful L-W rubber-tired tractor tows compactors weighing up to 50 tons. This — together with its high speed, maneuverability, easy handling, and ability to level fill with dozer blade while towing a compactor — makes it possible for Tournatractor to meet specified compaction requirements faster and in fewer passes.

2. Gives bonus compaction equal to extra 20-ton roller — With tires hydroflated, Tournatractor itself provides *bonus compaction equivalent to an extra 20-ton roller.* Rolling action of its broad, low-pressure tires confines and compacts soil under the tread — rather than displacing it. As a result, it helps obtain maximum compaction in less time,

MOBILE "JOB BALANCER"

When compaction work is completed, mobile L-W tractor is ideal for hit-and-run assignments. At a moment's notice, operator can unhitch towed tools and drive to cut area to balance pushers . . . or it can smooth haul roads, build shoulders, handle stockpiling, restore washouts, cut drainage ditches. Tournatractor will handle dozing or towing jobs anywhere on your project, to help complete your work faster . . . at bigger profit.

Let us give you the whole story. We'll be glad to demonstrate this powerful, 17-mph L-W Tournatractor. Ask for full details.

CT-1943-DC-1

Speedy, 210-hp Tournatractor levels and compacts fill in one operation . . . eliminates the need for many specialized tools that cause congestion on the fill. With tires hydroflated, L-W tractor alone provides compaction equivalent to an extra 20-ton roller . . . at a big saving in expense.

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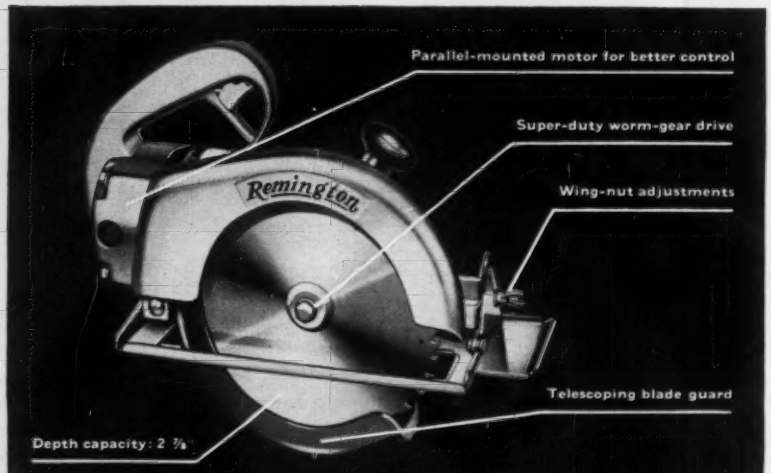
POWER to boost job efficiency with REMINGTON tools



Circular Saw, Model 86—8½" blade cuts up to 2-5/16" at 45°. Powerful 12 amp motor plus worm gear drive develops tremendous torque. 4200 rpm; ball and needle bearings; wt. 18 lbs. Complete with blade, wrench, and carrying case. UL approved. Price: $148.00*

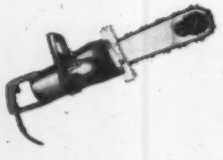
Power Trowel, Model TG4-26—2½-hp, 4-cycle, gasoline-powered engine; 26" ring size; automatic recoil starter; centrifugal clutch disengages at idle. Price $340.00.

Electric Drill, Model 125—½" capacity; 7-amp motor, most powerful in its class; 500 rpm; rugged construction yet light weight: 8½ lbs. Price $73.00*

Plane, Model 3P — Extra-heavy-duty, 3" combination door and surface plane—converts by removing fence; superb balance; 8.4-amp motor. Price: $170.00*

Remington delivers power, mobility and easy handling to help you cut costly man-hours on the tough jobs. Remington Power Tools are designed and built for extra-long service with minimum maintenance. Your Remington distributor stocks and services the industry's widest selection of power tools and parts.

Concrete Vibrator 10GVR has 5-hp, air-cooled, variable-speed gas engine—up to 3,200 rpm. Economical. Up to 10,000 v.p.m. Price from $414.00.



Electric Chain Saw, Model 11E12D—12-amp universal motor; hardened steel bevel gears; 12" bar with Roller Bearing nose; Wt.: 18 lbs. Price $120.00*

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REA Wins a Round

Accounting unit gives in on co-op lending authority

The Rural Electrification Administration apparently will not lose any of its lending authority for construction of local cooperative power systems.

REA, through the years, has held liberal authority to loan money for steam-plant construction, and for transmission facilities to serve residences, farms, and even industries, in so-called rural areas. Then three years ago, REA approved a loan to the Central Iowa Power Co-operative to build a line supplying electricity to the Lehigh Sewer Pipe and Tile Co.

Last July, Comptroller General Joseph Campbell told Secretary of Agriculture Ezra Taft Benson, who supervises REA, the loan to the Iowa co-op was illegal. His reason: the Iowa-Illinois Gas & Electric Co. was able and willing to serve the customers on the proposed line. Mr. Campbell said the money advanced on the loan should be reclaimed.

The REA and public power proponents, notably the National Rural Electric Co-operative Association, protested. The complaint: the ruling would restrict expansion of co-op construction, and would seriously restrict REA operations.

Last week, Mr. Campbell retreated and said:

- Congress has known of and acquiesced in REA loan policies, even when the co-op expansion may have intruded on private utility company ability to serve new customers.
- He has decided the loan to the Iowa co-op would not have to be returned to REA; that it has been spent and is being repaid.

He established that the General Accounting Office, which Mr. Campbell heads, does not have decision-making authority over the REA. It is only able to report to Congress about actions that are questionable.

The last point is important in many more areas than in this single case. During the Eisenhower Administration, the Comptroller General has by his "advisories" exerted a measure of policy control, particularly in cases involving installation of equipment at multi-purpose dam projects in the West.

Now, Washington sees the Rural Electrification Administration able to receive advice from Mr. Campbell, but then go ahead and set its own policies. Congress therefore will be REA's most potent court of appeal.

This L-W POWER-*Flow* 660 grader earns more dirtmoving profit per dollar invested, because it gives you a *double* increase in work-output. Grader applies husky 190 horsepower thru torque converter . . . supplies *extra push-power with added speed* . . . cuts deeper, moves more dirt, pushes it faster.

P x Sp = WpD

let: P = push-power
Sp = work-speed
WpD = work per day

The amount of production dirt-work your grader can do in a day is largely dependent upon: (1) its push-power; and (2) the rate of speed at which it can handle each task. Stating this fact in the formula P x Sp = WpD, you'll note that any increase in either left-side factor — push-power *or* work-speed — gives you a *multiplied* increase in the resulting work-output.

A big L-W POWER-*Flow*® 660 Adams† grader gives you an increase in *BOTH* factors. It is the LeTourneau-Westinghouse torque-converter drive that gives you extra power and added speed . . . to boost production and increase the profits on your grader operation. In a day's time, "660" always puts-out more work . . . prepares more miles of grade and ditch . . . push-loads more scraper yardage . . . blades more dirt than other graders. Here's how:

High-rpm push-power for all work

This big 190-hp L-W grader's torque converter and constant-mesh transmission deliver continuous high-rpm push-power *at all speeds.* Utilizing full engine-power, "660" can easily move big blade-loads, push-load scrapers, etc. As the initial starting load gets lighter, torque converter automatically brings grader up to *fastest possible pace for each particular blade-load.* Torque converter's fluid coupling also cushions the shock of load impacts . . . protects engine, transmission, final drive, and blade mechanism.

Cuts dead-head time

L-W POWER-*Flow* also completes more work because it wastes less time on travel . . . devotes a greater percentage of the work-day to production. It's the *fastest* grader made . . . travels job to job, or from one task to the next at up to 27.4 mph. In daily work-cycles, "660's" fast back-ups, alone, often save you an extra half-hour or more of productive time each day.

The torque converter eliminates stalling, and slipping-the-clutch to pick-up a heavy load . . . reduces number of time-consuming gear-ratio changes. And foot-operated forward-reverse power shift cuts waste-time on reversing of direction, and on all turn-arounds.

See for yourself how L-W Adams POWER-*Flow* 660 can give you extra production — more work per day — and help make bigger profits on your future work. *Ask us for a free demonstration.*

† Trademark G-1907-DC-1

Push plate can make extra $$$'s for you

With this 36" x 30" push plate, your L-W Adams grader can double as a pusher on small jobs . . . or fill-in on big ones where short cycles or tractor "breakdown" idles your dirtmovers. It's handy also for push-starting bulky equipment, to reduce delays that might cut your profit-per-yard. Plate can be attached either 30" or 37½" center-to-ground, to match your equipment. Available for 190, 160, 135, 123, 115, 80-hp L-W graders.

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Labor Warns Against Optimism

AFL-CIO sees little break in the recession and calls for a three-point program to ease unemployment

High wages, voluntary curbs on profit margins and a legislative program that would both help and hurt the construction industry were recommended by AFL-CIO President George Meany last week as the way out of the present recession.

Charging the Administration with politically inspired false economic optimism, Mr. Meany said a "boom on Wall Street" doesn't mean the recession is ending as long as 4.1 million workers remain unemployed. This figure represents 7.2% of the labor force and includes 9.6% of the nation's construction workers. As a monthly figure, it has been exceeded only four times in the last 16 years.

Mr. Meany's comments and recommendations represented organized labor's reply to the government's latest employment figures. Those figures put total unemployment at the lowest level for the year. But they also reported a drop in total employment and showed that the number of presently employed construction workers – 2,928,000 – is down 90,000 from a year ago.

What is happening, Mr. Meany said, is that the recovery rate in employment isn't keeping pace with the gains in industrial production, productivity and profit margins. He estimated that industrial production has recovered nearly 70% of its losses, while nonfarm employment has regained only 25%. The increase in productivity, he says, is "possibly the sharpest on record."

• **Meany's suggestions**—Mr. Meany argues that government and business must create a "boom on Main Street" before the recession can be licked.

He suggested these three approaches:

• A "continuing improvement" in wages and salaries—which means a continuing labor demand for wage increases.

• A voluntary effort on the part of industry to increase profits through smaller profit margins and higher sales.

• Federal legislation to stimulate school, housing, road and hospital construction, to help distressed areas, to improve the unemployment insurance system, to increase and broaden the minimum wage and to grant income tax relief to low and middle-income families.

The effect of such a package, labor feels, would be an increase in consumer purchasing power. This, it says, is essential to an expanding economy. But two of the legislative proposals would mean higher operating costs for contractors. Higher jobless benefits mean higher payroll taxes and a higher minimum wage means a higher floor for wages generally.

• **The figures**—The Administration sees in the government's October employment report an indication that the recession is becoming a thing of the past. Its optimism is based largely on three aspects of the report.

The Departments of Labor and Commerce found a "sharp job pickup among adult men in nonfarm activities" and "brisk hiring" in the auto, steel and home appliance industries. More firms are returning to normal workweeks and overtime work, pushing average hourly earnings of factory workers to a record high of $85.17. Unemployment fell off by 600,000 (a larger than usual drop for this time of year) and the number of persons out of work for 15 weeks or longer declined for the first time in a year.

Labor, however, does not view these as the "vital statistics of unemployment." Mr. Meany called attention to these figures instead:

• The number of persons out of work is 1.5 million higher than it was a year ago.

• The number of available jobs is down 1.1 million from September 1957.

• Last month, there were 4.1 million people out of work—of these, 1,461,000 had been idle for 15 weeks or longer.

• Some 235,000 workers exhausted their regular jobless insurance benefits in August.

• About 50,000 persons have already used up the extended benefits made available by Congress this year.

According to the government, insured unemployment has dropped by 275,000. All but four states have shown a decline. And the number of persons who exhausted their unemployment insurance was 20,000 less in September than in August.

A "Model" Union Shop Clause

How far can you go with a union shop clause in a labor contract and still stay within the law?

The National Labor Relations Board has come up with the answer. It has suggested a "model union security clause" to help "any parties who might encounter difficulty" in drafting such a clause. The clause it suggests is this:

"It shall be a condition of employment that all employees of the employer covered by this agreement who are members of the union in good standing on the effective date of this agreement shall remain members in good standing and those who are not members on the effective date of this agreement shall, on or after the thirtieth day following the effective date of this agreement, become and remain members in good standing in the union. It shall also be a condition of employment that all employees covered by this agreement and hired on or after its effective date shall, on or after the thirtieth day following the beginning of such employment, become and remain members in good standing in this union."

The board said the suggested clause is the "maximum permissible" under the present law. It appears in an NLRB decision holding that a union security clause that does not on its face meet the requirements of the law will not bar a representation election.

The union shop clause is one of the things outlawed by right-to-work laws and is as close to a closed shop as the building trades unions can come under the Taft-Hartley Act.

Examples of clauses the board said it will consider invalid:

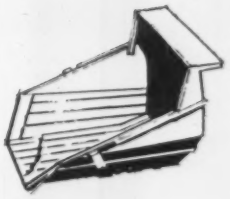
• Clauses that require the employer to give preference in hiring, tenure, seniority, wages and other working conditions to union members.

• Clauses delegating to a union unlawful control of hire, tenure, seniority wages or other terms of conditions of employment.

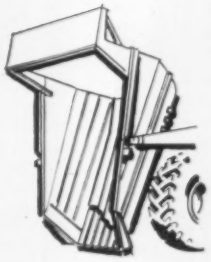
• Clauses that impose as a condition of employment the discharge of union obligations over and above the payment of periodic dues and initiation fees uniformally required of all members.

(*Labor continued on page 86*)

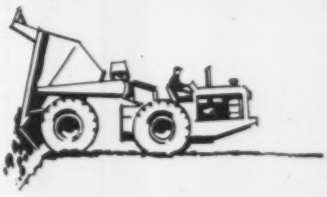
Haul problems?



Easier loading—Wide bowl offers large "target" for easy-loading without spillage. Open rear of body provides wide, low entry for dipper—an extra speed advantage for your shovel.



Resist body shocks, damage — Rear-Dump stands up under heaviest loading jolts. Bowl is all steel — no wood fillers. Floor is lined with heat-treated tool-steel strips, welded to solid billets laid over heavy steel plate. Sloping sides deflect load shock, quickly cushion small floor area with layer of material against rock-damage.



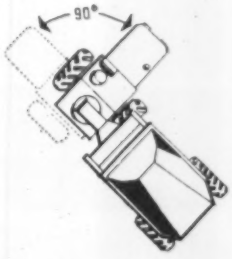
L-W Rear-Dump may be your answer!

No two hauling jobs are exactly alike. Each has its own particular problems. There are long hauls and short... all types of earth-born materials. Some jobs have restricted loading and dumping areas. Others tough grades, rough temporary haul roads. And there are wide variations in maintenance and repair problems — depending on loads, abrasive material, shock, weather, and available facilities and servicemen. So finding the *right kind* of hauler to solve your present and future problems isn't easy. That's why we think you might like to check these "problem-solving" features found only on LeTourneau-Westinghouse Rear-Dumps. All these special advantages of this off-road hauler are available on all three sizes: 11, 22, 35 tons load capacity... 138, 210, 300 or 335 hp. And, to ensure steady earnings for you, other hauled units can be used behind same Tournapull® 2-wheel prime-mover. These include scrapers, bottom-dumps, flatbeds.

Quick, positive dumping— Flick of fingertip switch on control panel instantly activates point-of-action electric hoist-motor. Body raises quickly to desired angle. At full dump position, edge of bowl is low behind rear wheels... material cannot roll forward to lodge against wheels, nor pile under rear end. Streamlined body sheds stickiest material readily. Front-wheel drive keeps power and traction on solid footing—well ahead of rear wheels — when dumping over high banks.

Hauls anywhere — Machine's big, low-pressure tires—5 to 6' tall, 1½ to 2' wide — "float" machine over sand, mud, rocks, RR tracks, or other obstacles. Broad tire-lugs maintain traction in any type of material. Power-transfer differential puts up to 80% of power on drive wheel with firmest footing, when either powered wheel begins to spin. Electric pivot-turn, through geared kingpin, lets operator "walk" prime-mover out of soft spots. Dumping action can also be used to "hump" hauler off a soft bank.

Faster spotting—Positive, electric power steer, through geared kingpin... pivots prime-mover to right angle for short 90° turns. As a result, unit makes continuous U-turn in less space than Rear-Dump's own length. In dump position, it turns in only about ⅔ of over-all length! Result? You spot faster at the shovel... grizzly or hopper... and get away faster from congested pit or dump areas.



Simplified construction — Look underneath a Tournapull Rear-Dump... note that this machine needs no springs, no tie rods, no hose and pipe lines, no frame, no long drive-shaft that require maintenance and repair. In place of a foundation frame and body sub-frame, Tournapull prime-mover and trail-unit are hitched together by means of a high horizontal yoke. Yoke pivots horizontally on kingpin at front... then extends back along side of bowl, where it pivots vertically just above and ahead of rear wheels. This vertical and horizontal kingpin arrangement provides an easy oscillating action that eliminates most twisting, tilting strains... permits higher speeds on uneven ground.

R-1852-G-1

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Tay-Holbrook, Inc., Plumbing Supplies
Headquarters, San Francisco

Here's the story of two old-timers. M. Greenberg's Sons, now in its 105th year, and Tay-Holbrook, Inc., a 110-year-old firm. A 100-year association between these two companies is one more example of the superiority of Greenberg bronze products now serving nearly every type of industry

Complete line includes such items as fire hydrants and industrial valves approved by Underwriters' Laboratories, Inc., and Associated Factory Mutual Fire Insurance Companies; bronze valves for Navy, Maritime and Industrial use; plumbing specialties; Josam drains and interceptors; bronze plaques and letters; many other ornamental bronze products.

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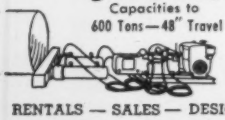

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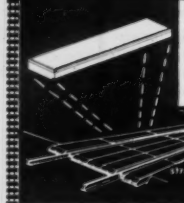
But often forgetting the postal zone number when you address an envelope can delay your letter long enough to miss the appointed round. There are 106 cities in America where a complete address includes a zone number. Always use it when writing to or from these cities.

CROSSING SLABS



Steel reenforced, edge armored PRECAST CONCRETE. Dimensions: 16¾" wide x 6'0" long.

Ideal for industrial plant crossings. Provides strength, durability, smooth riding qualities with minimum maintenance.

WRITE FOR Bulletin 858
PERMACRETE PRODUCTS CORPORATION
1839 South Wall St., Columbus 7, Ohio

. . . Labor

Carpenters Settle

Houston strike over but Toronto talks collapse

A seven-week carpenters strike that tied up $77 million worth of construction in Houston ended last week but a costly shutdown of Toronto's $100 million construction industry dragged on.

Break in the Houston strike came when the union reached agreement with Associated General Contractors and Construction Employers Association on a new 21-month contract that calls for a 36½ cent hourly wage increase. The strike had idled 2,000 carpenters and other building tradesmen.

The pay boost is payable in two installments: 18½ cents immediately and 18 cents next July 1. This pushes the carpenters wage scale to $3.26 an hour now. Independent contractors, who capitulated to the union's initial 22½ cent demand, are dropping four cents to conform to the new scale.

Meanwhile, efforts to break the Toronto deadlock collapsed when the Toronto Builders' Exchange offered disputing unions a 25 cent hourly wage increase on a take-it-or-leave-it basis.

The exchange is negotiating with cement masons, carpenters, operating engineers and rodmen. Following a strike by the cement masons, the exchange resorted to a shutdown.

An employer spokesman says the 25 cent offer, which has been rejected, is the largest ever made to any union in the exchange's history. "It was made," he said, "at a time when the industry is passing through one of the most difficult and competitive periods in years and is more than many contractors can afford." For this reason, he added, "it is our final offer."

Convict Labor to Be Used For a New State Prison

Over the opposition of contractors and labor groups, the Cabinet Budget Commission of Florida has approved a plan to build a new state prison at Raiford with convict labor.

State Prison Director Richard O. Culver, who proposed using convict labor, estimates that the move will save $5 million in building costs and at the same time provide an employment program for prisoners.

Objections to the plan were ignored because of the necessity of curtailing the state's construction program in the face of revenues smaller than those anticipated. The sum of $700,000 has been budgeted to get the work started by prison labor.

Emphasis on Industry Promotion

Bricklayers join with contractors and manufacturers in big campaign to promote masonry construction

The Bricklayers, Masons and Plasterers International Union, headed by veteran labor leader Harry Bates, singled out metal facade buildings last week as one of the principal targets of a new union promotion campaign.

John J. Murphy, the union's international secretary, said the bricklayers are joining with the rest of the brick and structural tile industry to promote the use of masonry construction in commercial and school buildings.

The campaign is the result of recent inroads in the construction field by thin curtain wall buildings.

The union estimates the brickmaking industry lost about 25% of its production in the commercial field to other materials during the last two years. Union members lost an estimated one million man-hours of work last year to skin construction. The estimates were presented to the bricklayers at their convention in Atlantic City last week.

The union plans a two-pronged program: a newspaper and advertising campaign promoting masonry construction; and a strong organizing campaign in the homebuilding field, where the demand for brickwork is increasing.

The importance of the residential market to bricklayers was stressed at the convention by Douglas Whitlock, chairman of the board of Structural Clay Products Institute. Mr. Whitlock said that the percentage of homes made of brick has increased from 25% in 1949 to 40% in 1957. He attributed this increase to research and promotional activities of brick and tile manufacturers, to union encouragement of bricklayers becoming mason contractors, to the union's progressive apprenticeship program and to local level activities of the Mason Contractors Association of America.

Mr. Murphy said the bricklayers union cannot pour millions of dollars into promotion but "we can and will develop an educational and advertising program at the community level to show the distinct advantages of masonry construction." The union is a member of the Allied Masonry Council, which has engaged in a similar program since its formation several years ago.

As part of the industry promotion program, Mr. Whitlock said, the Structural Clay Products Research Foundation is conducting "successful research projects" in such fields as lightweight clay products, brick packaging, resistance to atomic blasts and prefabricated brick panels. He said the industry's advertising campaign is meanwhile putting more emphasis on new colors in clay products and on the esthetics of brick and tile construction.

Mr. Whitlock summed up the efforts this way: "No other segment of the construction industry can show a greater degree of teamwork for a common goal than ours."

Unionists See the Need For a Shorter Workweek

A building trades union that has plugged spasmodically in the past for a shorter workweek is now claiming that the 40-hour week is obsolete. It warns, "a shorter workweek cannot be delayed much longer."

The claim by the United Brotherhood of Carpenters and Joiners of America is based on the behavior of the current recession. The union sees a "topsy-turvy picture" where production is making a faster comeback than employment.

To the union, this means more work is now being done by fewer workers than before. The carpenters say automation and "employer pressure" in a surplus labor market account for part of this increase in productivity.

What does this mean to the work force? The carpenters say, in effect, jobs will become scarcer because "by the end of the year the same number of employees will be able to produce 7% more goods in an eight hour day."

The union concludes that "all this points up one thing—the 40 hour week is fast outliving its usefulness."

Building Trades Appoint Hawaiian Trouble Shooter

A new Hawaiian representative for the AFL-CIO Building and Construction Trades Department has been appointed.

He is Jack C. Reynolds, a labor leader from Oakland, Calif.

Mr. Reynolds' assignment in Hawaii is to reorganize the Honolulu Building and Construction Trades Council previously headed by Arthur A. Rutledge, Hawaiian teamster leader.

The reorganization of the council is one step in current efforts to increase union membership in Hawaii's booming construction industry.

OFFICIAL PROPOSALS

Bids: November 13, 1958

Power Authority of the State of New York

ADVERTISEMENT FOR PROPOSALS
For the Furnishing and Delivery of Towers, Guides and Sills for Tuscarora Power Plant
Specifications No. PA-N-23015
Niagara Contract No. NP28

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the furnishing and delivery thereof f.o.b. destination, Niagara Falls, Niagara County, New York, of the towers, guides, and sills for the Tuscarora Power Plant until 10:30 A.M. Eastern Standard Time on the 13th day of November, 1958, at the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, at which time and place proposals will be opened and read aloud.

The work consists of fabricating, furnishing and delivery thereof of approximately 2,300 tons of embedded structural steel towers, guides and sills for the draft tube gates, trash racks, stoplogs and intake gates for the Tuscarora Power Plant.

Delivery of the above items will be required beginning March 15, 1959.

Plans, Specifications and Proposal Forms for the work may be obtained from the Power Authority of the State of New York, at The Coliseum Tower, 18th Floor, 10 Columbus Circle, New York 19, New York upon application and prepayment of a fee of Ten Dollars ($10.00) per initial set of contract documents, and Five Dollars ($5.00) per set for additional sets, no part of which will be refunded. Plans, Specifications and Proposal Forms for the work will be on file in the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, and in the office of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and may be inspected by prospective bidders during office hours.

Bids must be made and returned in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee (certified check or bid bond) will be required with each bid in an amount not less than 20 percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. Chapin
General Manager

Bids: November 18, 1958

Contract NYA-120.004

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
FOUNDATIONS & PIPING FOR SIX FUEL TANKS

Sealed proposals for the construction of foundations, piping, paving and other facilities for six fuel tanks at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, November 18, 1958, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Assistant Chief Engineer for Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract directly to the Authority will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, October 23, 1958

(Continued on the following page)

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $2.40 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division, Engineering News-Record Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

Bids: October 30, 1958.

New York State Road Works

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Canal Law and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time on the 30th day of October 1958, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following Projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. NICKERSON, District Engineer, 353 Broadway, Albany, New York						
Albany (Rte. 157A)	FARC 58-146	East Berne-New Salem, Pt. 1 S.H. 5501 New Salem-Thompsons Lake Pt. 1, S.H. 5724 East Berne-Clyckman Church, S.H. 978. Project F-409(3)	2.75	Asph Conc.=2.73 Mi. Misc. Work=0.02 Mi.	$35,000 Plans $5	$587,000
DISTRICT No. 2, L. KETCHUM, District Engineer, 109 No. Genesee Street, Utica 1, New York						
Oneida	M-58-13	Delta Dam, City of Rome	....	Rehabilitating Exist. Dam & Electrifying Gate Machinery	$25,000 Plans $10	450,000
DISTRICT No. 3, K. E. TOWLSON, Acting District Engineer, 333 E. Washington St., Syracuse, New York						
Oswego	M-58-14	New York State Lake Terminal, Oswego	....	Remove & Replace Concrete in Exist. North Pier Wall	$2,200 Plans $10	43,500
Tompkins	RC 58-158	S.H. 5225, S.H. 625, (Rte. 13), S.H. 5567, (Rte. 34), S.H. 8284, S.H. 8317, (Rte. 34B), S.H. 926 (Rte. 38), S.H. 1004, S.H. 338, S.H. 483, S.H. 1001, (Rte. 79), S.H. 1921, (Rte. 89), S.H. 616, (Rte. 96), S.H. 5043, S.H. 5122, S.H. 5213, (Rte. 96B), S.H. 1433, (Rte.222), S.H. 5575, (Rte. 227), S.H. 1189, (Rte. 327)	....	Roadside Development	$300 $2 Prop. Only No Plans	5,000
DISTRICT No. 4, B. F. PERRY, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Monroe	FAC 58-20	Rochester City: Inner Loop (Front to North Streets) Contract 3. Project U-1089(9)	0.67	Demolition of Buildings	$8,000 Plans $5	143,000
Monroe	FISH 58-16 FASH 58-17	Interstate Route Conn. 580 (Rochester-Bushnell Basin Pt. 3) Rochester Outer Loop (East Ave. to Blossom Rd.) Project I-1107(7) Project U-1097(3)	1.73 (2.86 Acc.)	9" Cement Conc. Pavt. 2 @ 25' Var. Wide=1.43 Mi. Misc. Work=0.30 Mi. (Access=1.08 Mi. Cement Conc. & 1.78 Mi. Asphalt Concrete) 4 Hy. Seps. Comp. I-Beams 187', 143.5'; 183.7' & 244' 1 RR Sep. Comp. I-Beam, 71.8' 1 RR Sep. Plate Girder, 80'	$235,000 Plans $10	4,308,000
DISTRICT No. 5, E. G. H. YOUNGMANN, District Engineer, State Office Bldg., 65 Court Street, Buffalo 2, New York						
Cattaraugus (Rte. 98)	FAC 58-21 FARC 58-149	City of Salamanca: Central Avenue Salamanca-Ellicottville, S.H. 1305. Project U-F-417(7)	1.49	Asph. Conc=1.43 Mi. Misc. Work=0.06 Mi. Comp. I-Beam Bridge 164'	$54,000 Plans $5	983,000
Erie Chautauqua & Niagara	RC 58-159	S.H. 130, S.H. 131, (Rte. 5), S.H. 9215, (Rte. 18B), S.H. 9216, (Rte. 324), S.H. 129, (Rte. 266), S.H. 584, (Rte. 270), S.H. 5670, S.H. 8098, S.H. 8003, S.H. 5262, S.H. 5664, S.H. 8008, S.H. 8033, S.H. 8032, (Rte. 20), S.H. 713, S.H. 729, S.H. 9014, S.H. 1045, S.H. 1315, (Rte. 425), S.H. 8162, S.H. 773, A, S.H. 9095, (Rte. 270)	....	Roadside Development	$600 $2 Pros. Only No Plans	11,000
DISTRICT No. 6, J. H. THOMAS, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Chemung (Rtes. 14 & 328)	FARC 58-156	Fassett-Southport, S.H. 1561, South Broadway, S.H. 30, Southport, Pt. 1 & Pt. 3, S.H. 13, S.H. 29 Project F-479(14). Project U-479(14)	1.27	Asph. Conc.=1.10 Mi. Misc. Work=0.17 Mi. 2 Prestressed Conc. Bridges 151.8' & 285'	$80,000 Plans $5	1,427,000
Yates	FASS 58-19	Rushville-Ferguson Cors. County Road Project S-489(1)	2.43	Bituminous Macadam Type 1	$18,000 Plans $5	323,000
DISTRICT No. 7, R. W. SWEET, District Engineer, 444 Van Duzee Street, Watertown, New York						
Franklin & St. Lawrence (Rte. 37)	RC 58-153	Malone-Fort Covington, Pt. 2, S.H. 702, (Br. No. 1) Massena-Helena, Pt. 1, S.H. 1261, (Br. No. 2)	....	Painting 2 Brs.	$400 Plans $5	7,000
Jefferson (Rte. 81)	FITS 58-4 FATS 58-3	Interstate Route 505, Section 7C-1 (S.H. FISH 57-2) Section 7C-2, (S.H. FISH 57-12) Sacketts Harbor, (Arsenal Street) S.H. 237 Adams-Watertown, Pt. 2 S.H. 425 Project I-1118(20), Project F-327(11)	12.66	Furnish & Install Traffic Signs	$5,000 Plans $5	90,000
DISTRICT No. 8, K. G. RAUER, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Dutchess (Rte. 9)	FARC 58-151	Poughkeepsie-Hyde Park S.H. 453. Project F-322(17)	1.57	Asphalt Concrete	$21,000 Plans $5	399,000
Dutchess (Rte. 361)	FARC 58-152	Millerton-Indian Pond, S.H. 1007. Project S-490(1)	2.36	Asphalt Concrete	$15,000 Plans $5	277,000
Orange (Rte. 17K)	FARC 58-144	Kocheeton Turnpike, Pt. 1, S.H. 113. Project U-483(5)	0.74	9" Cem. Conc. Pavt. 2 @ 24' Wide=0.66 Mi. Misc. Work=0.08 Mi. R.C. Box Br. 32.1'	$30,000 Plans $5	523,000
Ulster	RC 58-154	S.H. 5169, S.H. 5601, S.H. 228, S.H. 5000, (Rte. 9W), S.H. 142, S.H. 38, S.H. 37, S.H. 602, S.H. 1882, (Rte. 212)	....	Roadside Development	$500 Plans $5	9,000
Ulster (Rte. 28)	FISH 58-14 FARC 58-145 ST 58-1	Interstate Route Connection 530, (Thruway Access Route 28-Albany Avenue and Broadway in Kingston) Kingston-West Hurley, S.H. 5173 and Access Roads to Catskill Thruway at Int. Route Conn. 530 Project I-IG-1150(1), Project U-1009(2)	1.39 (1.19 Acc.)	9" Cem. Conc. Pavt. 2 @ 24' Var. Wide=1.51 Mi. Asph. Conc.=1.07 Mi. Comp. Beam Br. 346' Pres. Conc. Beam Br. 176'	$175,000 Plans $5	3,169,000
Ulster (Rte. 28)	FARC 58-160	Pine Hill-Griffin Corners, S.H. 5177 Ulster-Delaware Pt. 3, S. H. 31. Project F-659(6)	3.33 (1.47 Acc.)	Asph. Conc.=3.22 Mi. Misc. Work=0.11 Mi. Pres. Conc. Viaduct 591' 4 R.C. Box Brs., 31.3', 20.2', 21.2', 28.1'	$115,000 Plans $5	2,059,000
Westchester	SBP 58-1	Sprain Brook Parkway (Cross County Parkway to Tuckahoe Road)	2.27 (4.69 Acc.)	8" Cem. Conc. Pavt. 2 @ 37' Var. Wide=1.97 Mi. Misc. Work=0.30 Mi. (Access=3.10 Mi. Cem. Conc. and 1.59 Mi. Asph Conc.) 5 Hwy. Seps. Comp. I-Beams 140.2', 298.8', 219.5'; 144.5', & 165.6' 2 Hwy. Sep. Comp. Weld. Plate Gird. 200.6', 326' 2 Brs. Comp. I-Beams 64.8' and 73' 6 Brs. R.C. Boxes 42.5', 31', 29', 29', 20' and 28'	$611,000 Plans $10	11,116,000
DISTRICT No. 9, J. C. FEDERICK, District Engineer, 71 Frederick Street, Binghamton, New York						
Broome	FISH 58-15	Interstate Route 505: Penna. State Line to Five Mile Point Cont. 3 (Trim St. to Sunset Drive) Project I-1127(10)	1.89 (0.68 Acc.)	Grading and Drainage 3 Twin Hy. Seps. Comp. I-Beams 126.3' and 124.5'; 131' and 128'; 154.3' and 149.8'	$90,000 Plans $5	1,655,000
DISTRICT No. 10, M. E. GOUL, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Bronx	FIBE 58-1	Interstate Route Connection 511, Bruckner Expressway (Sect. 2 Cont. 1D). Project I-1068(20)	....	Demolition of Buildings	$9,000 Plans $5	164,000
Nassau & Suffolk (Rtes. 27, 101, 106, 107, 109 & 110)	RC 58-155	Massapequa-Glen Cove, S.H. 9017, Greenvale-Glen Cove, FASH 52-7; Jericho-Oyster Bay, S.H. 9021; Middle Neck Road, S.H. 9019; Conduit Blvd. Pt. 3, S.H. 1699A; Huntington-Amityville, S.H. 1219; Maywood-Babylon, S.H. 1841	8.68	Landscaping	$3,500 Plans $5	63,000
Suffolk (Rte. 25)	FARC 58-157	Jericho Turnpike Pt. 2, S.H. 5111; Smithtown Branch-Coram, S.H. 8268; Coram-Middle Island East, S.H. 8291; Riverhead- Mattituck Pts. 1 and 3, S.H. 8181 Projects F-1000(5); F-432(3); F-448(4); F-348(9)	2.41	Drainage Basins and Misc. Work	$42,000 Plans $5	767,000

(Continued on the following page)

OFFICIAL PROPOSALS

(Continued from preceding page)

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: October 30, 1958

Contract B. P. 58-72

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Public Building Law and Highway Law, sealed proposals will be received, until 10:30 A.M., October 30, 1958, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Gov. Alfred E. Smith State Office Building, Albany, New York for:

Contract B.P. 58-72 for: Beach Protection (Artificial Beach Nourishment and Dune Restoration) at Westhampton Beach, Suffolk County, New York

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 12th Floor, The Gov. Alfred E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, New York.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract B.P. 58-72 may be examined and obtained at the office of Mr. Milton E. Goul, 325 West Main St., Babylon, L. I., New York.

The deposit for Plans and Proposal Forms for Contract B.P. 58-72 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's Estimate of Cost for Contract B.P. 58-72 is $190,000.00.

Proposals for Contract B.P. 58-72 must be submitted in a separate sealed envelope with the name and number of the contract, plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the State of New York, Commissioner of Taxation and Finance for the sum of $10,000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Public Building Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: November 14, 1958

City of Fort Lauderdale, Florida

NOTICE TO CONTRACTORS

Sealed bids will be received until 11:00 A.M. on November 14, 1958, in the office of the City Manager of Fort Lauderdale, Florida, for Project No. G-151, Lockhart Stadium, at which time all bids will be opened.

The work includes the construction of the above-named facility according to the plans and specifications as prepared by William G. Crawford, Architect.

Bidding Forms may be obtained at the office of the City Engineer. Plans and specifications are on file and may be obtained at the office of the City Engineer. General Contractors may obtain up to two (2) sets of plans and specifications by depositing Fifty Dollars ($50.00) per set. This deposit will be refunded upon return of those sets in good condition within 10 days following the opening of the bids. General Contractors who require more than two sets and any subcontractors who desire sets may purchase same at a cost of Fifty Dollars ($50.00) per set which shall not be refunded. All checks shall be made payable to the City of Fort Lauderdale.

Bids must be substituted in a sealed envelope, addressed to the City of Fort Lauderdale, Florida, and the name of the bidder and the project must appear upon the outside of the envelope. A certified or cashier's check for 5% of the base bid plus all additive alternates, made payable to the City of Fort Lauderdale, Florida, or bid bond in said amount written by a corporate surety company holding a Certificate of Authority from the Secretary of the Treasury of the United States as acceptable sureties on Federal bonds, said bid bond executed and issued by a Resident Agent licensed by and having office in the City of Fort Lauderdale, Florida, representing such Corporate Surety, shall accompany each proposal as evidence of the good faith and responsibility of the bidder. The check or the bid bond of the successful bidder will be retained by the City as liquidated damages, should the successful bidder fail or refuse to enter into a contract with the City for the execution of the work embraced in the proposal. Checks and bid bonds of unsuccessful bidders will be returned within twenty-four (24) hours after acceptance of bid by the City Commission, or within thirty (30) days after opening bids.

The City of Fort Lauderdale reserves the right to waive any informality in any bid, and to reject any or all bids.

WILLIAM J. VEEDER
City Manager

Bids: October 30, 1958

Soil Explorations and Foundation Investigation

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 a.m. Eastern Standard Time on October 30, 1958, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON F. D. ROOSEVELT DRIVE, EAST 28TH STREET TO EAST 41ST STREET, NEW YORK CITY, NEW YORK COUNTY, WHICH CONSTITUTES CONTRACT SPEC. NO. SM-133.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, N. Y.
(b) Mr. M. E. Goul, District Engineer, New York State Department of Public Works, 325 West Main Street, Babylon, Long Island, New York.
(c) Mr. William M. Trainer, Associate Contract Engineer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50 percent of deposit.

The Engineer's Estimate of cost for this work is $40,625.00.

Proposal for this contract must be submitted in separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $2,500.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPERINTENDENT OF
PUBLIC WORKS

Bids: November 5, 1958

Contract PN-560.003

THE PORT OF NEW YORK AUTHORITY
PORT NEWARK
BUILDINGS 261 AND 262
SURCHARGE FILL

Sealed proposals for the placing of surcharge fill for Buildings 261 and 262 at Port Newark will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Wednesday, November 5, 1958, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Assistant Chief Engineer for Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract directly to the Authority will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, October 23, 1958

U. S. Government

United States Department of Commerce, Bureau of Public Roads, October 16, 1958. SEALED BIDS will be received at the office of the Inter-American Highway Division, Bureau of Public Roads, Room 3069, General Services Building, Washington 25, D. C., until 2:00 p.m. E.S.T., November 20, 1958, for the construction of Rama Road Project R-3C on the Rama Road in the Republic of Nicaragua. The project consists of the construction of 5 steel I-Beam bridges and one steel Deck Truss bridge with approach grading between the Muhan and Mico rivers. Bidders will be limited to United States or Nicaragua firms with a satisfactory record of performance on highway construction in the United States of America or in the Republic of Nicaragua. The approximate quantities of the major items of work are: 8010 cu. yds. uncl. excavation for structures, 3733 cu. yds. Class "A" Concrete, 454,500 lbs. reinforcing steel, 1,222,140 lbs. structural steel erected, (steel furnished by Government). One set of Plans, Specifications and Proposal Forms will be furnished free to prospective bidders upon request at the address given above, or at the Inter-American Highway District Office, Bureau of Public Roads, 203 Carlos Palazio Bldg., Calle 5a N., Managua, Nicaragua. Additional sets of plans may be purchased for $25.00. Paul F. Royster, Asst. Commissioner for Operations.

READ THE OFFICIAL
PROPOSAL COLUMN OF
ENGINEERING NEWS-RECORD
THIS WEEK AND EVERY WEEK

OFFICIAL PROPOSALS

Bids: October 30, 1958

Contract B.P. 58-69

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Public Building Law and Highway Law, sealed proposals will be received, until 10:30 A.M., D.S.T., October 30, 1958, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany N. Y. for:

Contract B.P. 58-69 for Beach Protection (Artificial Beach Nourishment) at Davis Park, Town of Brookhaven, Suffolk County, New York.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 12th Floor, The Gov. Alfred E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, New York.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract B.P. 58-69 may be examined and obtained at the office of Mr. Milton E. Goul, 325 West Main St., Babylon, L. I., New York.

The deposit for Plans and Proposal Forms for Contract B.P. 58-69 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's Estimate of Cost for Contract B.P. 58-69 is $73,000.00.

Proposals for Contract B.P. 58-69 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the State of New York, Commissioner of Taxation and Finance for the sum of $4,000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Public Building Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

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for New Projects

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Subject to Agency Commission.

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Classified Adv. Div. of this publication.
Send to office nearest you.
NEW YORK 36: P. O. BOX 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

• POSITIONS VACANT

Highway Engineers—Highway Engineers with a minimum of 3 years experience. Excellent opportunity with established consulting engineering firm in Middle West. P-7909, Engineering News-Record.

Water Treatment Engineer Must have had experience in the design of filtration plants, water softening, and iron removal. Registration desirous but not necessary. Consulting Engineering firm in the Midwest. State education, background and experience. P-8887, Engineering News-Record.

Architectural draftsman for school and shopping center planning. Experience required—First class draftsman and designer, specification writing. Permanent position for qualified man. Write P. O. Box 207, Lancaster, Ohio giving qualifications, experience and salary or call Lancaster, Olive 3-4316 for appointment.

Assist. Prof.—To teach undergrad. courses in structures and mechanics. Salary open. Civil Eng., Univ. of No. Dak., Grand Forks.

Structural Detailers for growing steel fabricator located in Northern, New York. Minimum of three years experience opportunity for ambitious men to grow with Company. P-9064, Engineering News-Record.

Soil Scientist Wanted for Soil Survey and Land Classification Project. Ph D graduate in soil science supplemented by a minimum of three years' experience in soil survey and classification work. Or B.S. or M.S. graduate in soil science supplemented by a minimum of six years' experience in soil survey or land classification and evaluation work for agricultural use. Approximately 2 years employment. Salary, I.D. 250 Nationality no restriction. Embassy of The Republic of Iraq, Washington, D. C.

• POSITIONS VACANT

Resident Engineer—Structural or Civil Engineering Graduate with some experience in mechanical and electrical construction—Industrial building construction in northern New Jersey—Reply giving background, experience and salary desired. P-9120, Engineering News-Record.

Superintendent for immediate opening in medium-sized Structural Steel Fabrication Shop in Baltimore. Must have experience as Superintendent or Assistant Superintendent in Structural Steel Shop. Experience must include knowledge of shop machines and techniques. Send complete resume and salary requirements. Your answer will be held in confidence. P-9130, Engineering News-Record.

Civil Engineer—Recent graduate, structures option, needed by prestressed concrete firm. Write Prescon Corporation, Box 4186, Corpus Christi, Texas.

Civil Engineer. Four vacancies. For work in water and sewer design, water distribution, traffic engineering, or public works departments. Start recent CE graduate $390 in salary range to $482, plus further advancement. Start recently registered engineer $498 in range to $602, plus further advancement. Best benefits. Work under supervision of registered engineers. Write Personnel Department, City of Austin, Box 1160, Austin.

Structural Engineer—Midwestern prestressed and precast concrete producer needs experienced man to design products and help customers use them. Good opportunity for imaginative man interested in new developments in structural systems. Reply giving resume of education, experience, etc. P-9136, Engineering News-Record.

Licensed Civil Engineer Associate desired by reputable well established New Orleans consulting mechanical engineering firm to direct designs for municipal works, water, gas, sewerage, power plants, general civil work. Must be capable of meeting public and assuming major responsibilities. Reply held strictly confidential. Submit full background. P-9134, Engineering News-Record.

• POSITIONS VACANT

Experienced Engineer to supervise subdivision construction and development, including pavement, drainage, water, and sewage facilities. Central Florida location with consulting engineering firm. P-9135, Engineering News-Record.

• POSITIONS WANTED

Estimator—Chief Engineer with experience in both field and office on all types of work, invites replies from progressive Heavy Construction Contractors. PW-8961, Engineering News-Record.

Civil engineer, graduated, 6 years varied design and field experience, wants responsible position Southwest—South. PW-8957, Engineering News-Record.

Structural Engineer, 50, leaving for Australia October 26, 1958 will welcome opportunity to work as Engineer or technical representative. Have been self-employed as Consultant to Architects and Industry for the last 14 years. Detailed resume on request. PW-8970, Engineering News-Record.

Graduate Student (Structures with some Sanitary) age 28, 2 yrs. exp. in Sanitary field work. Available Feb. Prefer Midwest. PW-8962, Engineering News-Record.

Project Manager or Construction Superintendent 25 years experience, heavy construction on heavy industrial, steel mill or oil refinery installations. Best references of proven accomplishments, available on short notice. Willing to travel. PW-8981, Engineering News-Record.

Concrete Inspector, Canadian, recent immigrant. Age 30, 10 years experience in hydroelectric and heavy industrial concrete inspection. Member A.C.I. & A.S.T.M. Excel. references. Experienced all phases of control and construction. PW-8994, Engineering News-Record.

Superintendent Sewer Construction, age 46, 23 years experience, familiar with all phases of installation. PW-9033, Engineering News-Record.

(Continued on opposite page)

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Career opportunities for individuals interested in professional recognition ample opportunity for advancement based on merit, plus employee retirement plan, group life insurance, hospitalization, paid vacation and holidays.

EXPERIENCE REQUIRED

Mail Resume To F. W. AHERN, Personnel Director

MICHAEL BAKER, JR., INC. *Consulting Engineers*

Baker Building Phone: SPruce 4-3010 Rochester, Penna.

ENGINEERS

PERMANENT OPENINGS FOR QUALIFIED MEN EXPERIENCED IN THE DESIGN OR SPECIFICATIONS FOR

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PREFER GRADUATE REGISTERED ENGINEERS WHO SEEK LONG RANGE EMPLOYMENT WITH AMPLE OPPORTUNITY FOR PROFESSIONAL DEVELOPMENT AND ADVANCEMENT IN A STEADILY EXPANDING AND GROWING ORGANIZATION.

Paid vacation, sick leave, holiday, overtime. Excellent Employee Benefits Plan provides retirement income plus life and disability insurance. Blue Cross. Moving allowance.

Work will be in the general offices in St. Louis. Interviews can be arranged in Washington, D. C., and San Francisco also.

Please write fully, including salary data, to

SVERDRUP & PARCEL, Inc.
ENGINEERS — ARCHITECTS
915 Olive St. Louis 1, Mo.

SANITARY OR CIVIL ENGINEER

Small engineering firm in Southeastern Pennsylvania. Applicant should have experience and ability to make preliminary investigations and reports, design and prepare construction plans and specifications for sewer and water projects. Send resume of experience, education and state salary desired.

P-9026, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

HIGHWAY ENGINEERS

Well known engineering and construction firm is interested in receiving applications from qualified graduate engineers for work in Central and South America. Must have had highway experience. Should be fluent in Spanish. Pertinent categories follow: Project managers, location engineers, design engineers, soils and materials engineers, construction engineers, maintenance engineers, bridge design engineers, administration and accounts manager.

Interested parties should mail application and resume of experience to:

CHIEF ENGINEER
P. O. Box 3 Houston 1, Texas

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FIELD ENGINEER

Nationally known organization offers excellent opportunity for young civil engineer graduate. Engineering consulting and promotional work in highway and concrete fields. Location Ohio, Indiana and Kentucky area. Car allowance and expenses. Permanent position. Salary based on qualifications and experience.

P-9093, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

ESTIMATOR

Midwest engineering and construction company seeks estimator thoroughly experienced in preparation of competitive bid estimates for industrial type projects. Will be responsible for complete estimate from basic take-off to final submission form. Prefer graduate Civil Engineer with a minimum of ten years applicable experience. Will consider non-graduate who has considerable experience. Liberal fringe benefits. All replies confidential.

P-9022, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ENGINEERING MANAGER

A Los Angeles Engineering and Construction firm has an opening for an Engineering Manager to plan, organize and administer engineering activities of one of its divisions. This position entails the setting of policies, representing the corporation on engineering and design matters, and reviewing engineering concepts.

Candidate should have an engineering degree from an accredited university and at least 15 years experience in the design and supervision of design of heavy industrial facilities. Recent experience in the engineering management of large scale engineering projects and familiarity with construction problems also required. Please submit resume to:

P-9020 Engineering News Record
1125 W. 6th St., Los Angeles 17, Calif.

WANTED

ESTIMATING ENGINEER

Midwestern consulting engineering firm needs engineer with estimating experience for contractors and with consulting experience to organize and head estimating.

P-9092, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

CHIEF HIGHWAY ENGINEER

Broad experience required in design, construction and administrative phases. Ability to manage large highway department, in addition to client negotiations and liaison, is paramount.

Frank L. Ehasz
Consulting Engineer
40-29 27th St. L. I. C. 1, N. Y.

• POSITIONS WANTED
(Continued from page 90)

Manager; Project or District. 30 years experience in powerhouse, industrial, chemical plant, heavy construction, sewage, and filtration plants. Estimates to completion. Engineering education. Available first of November. PW-9057, Engineering News-Record.

Sanitary Engineer, P.E. with 35 years experience in water supply, water treatment, sewers and sewage treatment. Excellent health. Experience in direction of engineering staff in the production of contract drawings and supervision of construction. Member of and active in Technical Societies. PW-9048, Engineering News-Record.

Gen'l. Supt., Proj. Mgr. or Estimator. 25 yrs. expr. building const. Available for responsible position. Prefer Texas, Arizona, California or Florida. PW-9069, Engineering News-Record.

Construction Executive; Substantial and successful record as a producer. Minimum $15,000.00, general, or construction manager level. PW-9096, Engineering News-Record.

Registered engineer with experience in manufacture of prestressed concrete and eleven years experience in concrete promotion qualified to take complete responsibility for sales, engineering and production of structural concrete or related products available for position with producer or as manufacturers representative. PW-9113, Engineering News-Record.

• POSITIONS WANTED

Gen. Super.—Proj. Engr., C.E., 46, 23 yrs. experience with men and work on 3 continents, supervision and engineering, highways, bridges, R.R., heavy construction, 5 languages, desires responsible position with progressive contractor or engineering firm. S. America preferred. PW-9112, Engineering News-Record.

Sales Engineer, 30, married, ten years sales and promotion precast products. Excellent following highway, heavy, sewer contractors and consultants New York Area. PW-9100, Engineering News-Record.

Construction Supt. General Construction. PW-8896, Engineering News-Record.

Construction Supt. 24 years well rounded experience on locks, dams, powerhouses, steam plants, bridges, and industrial plants. 14 yrs. in supervision. Resume on request. PW-9126, Engineering News-Record.

Manager—Estimator—Supervisor or General Assistant to Owner. Self starting executive with professional engineers license offers twenty-five years experience in all phases of heavy construction. PW-9127, Engineering News-Record.

Field Engineer, 24, B.C.E., desires position with general contractor. Excellent references. Available December. Present location central New York; will relocate. PW-9132, Engineering News-Record.

• POSITIONS WANTED

Supt. Const., 20 yrs Institutional, Industtrial, Commercial. Engineer. Anywhere. PW-9138, Engineering News-Record.

Sales Promotion. Very small co. Single woman engineer, 32. "Q" clearance. Industrial. PW-9117, Engineering News-Record.

Civil Engineer, five year C.E. Degree, three years experience in structural design and teaching. Also talented in human relations and administration. Desires foreign assignment, but will consider challenging U.S. position. PW-9133, Engineering News-Record.

Project Manager—General Superintendent Paper mills—powerhouses; industrial, heavy commercial; organizer, administrator, producer. Good following—will travel; age 44; not an Engineer; practical builder with special management training—Min. salary $1,000 per month commensurate with responsibility. Resume on request. PW-9156, Engineering News-Record.

BSCE.—LLB. 12 years experience all phases, Road, Bridge & Municipal Construction. Interested in permanent position, with managerial opportunities, mid thirties. PW-9157, Engineering News-Record.

Project Manager or Const. Supt.—25 years experience all types construction. Willing to travel, available Nov. 1st. PW-9158, Engineering News-Record.

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The advertising rate is $25.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

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DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads.

NOTICE TO BIDDERS

USED DISPOSAL PLANT EQUIPMENT

The Borough of Sayreville, N. J. will receive bids on Nov. 18, 1958 at 7:30 PM for used sewage disposal plant equipment. For information, details and list of equipment of sale including proposal sheet and arrangement for prior inspection contact:

HERMAN G. MOSELOWITZ, *Borough Engineer*
7 Spring St., New Brunswick, N. J.
Phone Kilmer 5-5141

• CONTRACT WORK WANTED

Experienced Reinforced Concrete and Structural Steel detailers, designers and checkers, in Buildings and Highway Bridges, desire work on contract and subcontract basis. Gustav Deltscheff, 1030 So. Frederick Street, Arlington 4, Va.

• WANTED

Anything within reason that is wanted in the field served by Engineering News-Record can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

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ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. Forty-eighth year.
Write, Wire or Phone—Without Obligation
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14—Model 63TD 22 Ton Rear Dumps
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Kiewit - Utah Companies
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Box 106—Massena, N. Y.

FOR THE BEST BUY IN DIESEL POWER FOR DREDGE PUMP SERVICE!

Unused Govt. Surplus, General Motors 1600 H.P. Diesel Engines, 16-cylinder, V-type, 2-cycle. Complete. Also excellent for Generator Service or Marine Propulsion Service with Rvs. & Red. Gear. Details & Stock List upon request.

Construction & Power Machinery, Inc.
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Parsons 250, 310 & 221
Barber Greene 44-C 8'3" & Roustabout
Cleveland 95, 110, 140 & 320
AIR COMPRESSOR RENTAL CO. INC.
19615 Nottingham Rd., Cleveland 10, Ohio

FOR SALE

Excellent used REX Model 200 Double Pumpcrete, Waukesha engine drive, overhead platform and controls with pugmill remixer and Wisconsin engine drive, skid mounted, selective transmission with large quantity Model 80 pipeline. This machine used one job only. Excellent condition. Presently located Kansas City, Missouri. Contact us for full details.

THE G. W. VAN KEPPEL COMPANY
2461 Pennway
Kansas City 8, Missouri
Phone GRand 1-1540

FOR SALE

Complete batching plant

consisting of Butler 500 & 250 barrel cement storage bins; 2 track unloading plants with elevators & screws; weigh batchers; and Blaw Knox 100 ton aggregate bin and weigh batcher. Majority of equipment used just 4 months; original cost $22,000 asking $15,000.

M. L. McINTIRE
BOX #165 DREXEL HILL, PENNA.

WANTED

Combination office engineer and pilot interested in heavy construction, for flying approx. 20% of the time, light twins used in construction business. Must have instrument rating.

A. S. WIKSTROM INC.
P. O. Box 217 Skaneateles, New York

AN AUCTION
CONSTRUCTION EQUIPMENT
FRIDAY, OCTOBER 31, 10 A.M.
PASSAIC, NEW JERSEY

LOCATION: The Union Building & Construction Co. yard on Riverview Drive, 300 yd. North of U.S. Hiway 46, ("3-Guys" corner), in Totowa Borough, just West of Passaic or 15 miles West of New York City.

NOTE: All of this equipment belongs to Union Building & Construction Co. and it is just off of two jobs: The Denville, N. J. section of State Route 101 and the link between Mass. Turnpike and N. Y. State Thruway at Canaan, N. Y.

EACH PIECE POSITIVELY SELLS TO THE HIGHEST BIDDER WITHOUT LIMIT, MINIMUM OR RESERVATION!!!

DRAGLINE—PAVER—LOADER—PILE HAMMER—HYDRO CRANE

Lima 1201 Crane-Dragline, w/Cummins 'L' engine, 85' boom, new roller path in August '58; Shovel front & High gantry assembly for Lima 1201 Machine; Ransome 34E Dual Drum Paver, w/Cummins HB engine, new Drum Liners & flights in Aug '58, very good; Euclid 10BV Loader, Converted from 9BV & used less than 500 hours since, GMC 6-110 engine; Vulcan 50C Pile Hammer; Hydro-Crane, Model E5G, on '56 GMC chassis.

BOTTOM DUMPS—MOTOR SCRAPERS

8—Euclid 23 TDT-122W Bottom Dumps, S/N's 18754 to 18626, w/GMC 6-110 engines, Allison Torquomatic transmissions, good; 3 Euclid 23 TDT Motor Scrapers, S/N's 18384, 18383, & 19375, w/GMC 6-110 engines, Allison Torquomatic transmissions, good; 3 Euclid S-18 Motor Scrapers, S/N's 20055, 20048, & 20043, w/GMC 6-110 engines, Allison Torquomatic transmissions, good.

COMPRESSORS—AIR TRACS—DRILL MASTER

Chicago-Pneumatic 900 RO-2 rotary compressor, 900 CFM, w/GMC 6-110 engine, on rubber; 3 Chicago Pneumatic 600 RO-2 rotary compressors, 600 CFM, w/GMC 6-71 engines, on rubber; Jaeger 210 CFM compressor, on '50 Ford Truck; 4 Ingersoll Rand Air Trac Drills, w/DH-123J 4½" drifters, RMC 12' chain feed; Ingersoll Rand Drill Master, on AC HD-20H, equipped for remote control, used little; Quincey 325-4 Compressor, 20 CFM, w/gas engine, excellent; Air Tools.

TRACTORS—GRADERS—COMPACTOR—LOADERS—SCRAPER

Cat D-9, S/N 19A 266, w/Cat #29 CCU, 'C' frame & push cup; Cat D-8, S/N 2U 21183, w/dozer; Cat D-8, S/N 2U 21129, w/Cat 8A dozer; AC HD-20H, S/N 5450, w/push plate & DDPCU; AC HD-20H, S/N 3877, w/push plate & DDPCU; 2 AC HD-16AC, S/N's 447 & 419, w/dozers & DDPCU's; 3-AC HD 15AC's, S/N's 2989, 2919, & 2868, w/dozers & torque converters; AC AD40 Grader, S/N 986, very good; Cat #12 Grader, S/N 8T 3532, w/scarifier, booster steering, good; 2 Dozer groups for Cat #12, one is new, the other excellent; Bros 50 Ton Compactor, model 450, very good; 2 Haiss 80W Bucket loaders, w/Waukesha engines; Cat 80 Scraper.

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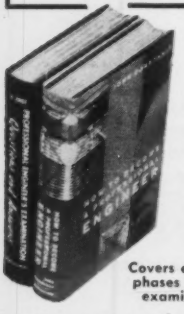

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Editorials

On Engineers—and Scientists

THE ENGINEERING PROFESSION should be cheered by two simple statements made by James R. Killian, Jr., the President's scientific advisor, at the annual dinner of the American Institute of Consulting Engineers last week.

Briefly describing his role as special assistant to the President, Mr. Killian stressed (1) that he is concerned with engineers no less than with scientists and (2) that he seeks a close coupling with engineering through the Founder Societies and through Engineers Joint Council.

This public statement by the President's advisor should come as good news especially to EJC, which had offered its services to Mr. Killian. The Killian statement should also come as a challenge to EJC to pursue the standing it seeks for engineers alongside scientists in advising the President and his Cabinet on technical matters. The well-meaning words of James Killian will remain mere words if the engineering profession, through EJC, does not now accept the challenge implicit in them. Perhaps a good place to start would be for EJC to pursue its pet project in semantics and remind Mr. Killian that in his speech last week he referred to "science and technology" some 14 times, when he might have said "science and engineering."

More Discussion Time, Please

A HIGHLY DESIRABLE OPPORTUNITY to share information on new developments in structural theory was presented by the joint meeting of the American Society of Civil Engineers and the International Association for Bridge and Structural Engineering last week. The meeting brought out many ideas that could lead to substantial advances in structural theory. However, it might have been planned and scheduled for even better results.

Technical programs of this type could stand a good deal of improvement to further the exchange of ideas among those attending. This holds true for programs of all learned societies.

Last week's program was crowded with speakers. This was good in that many topics could be presented and many different opinions heard. However, it had the disadvantage of allotting so little time to each speaker that no subject could be covered in sufficient detail. Also, it discouraged critical discussion. As a result, members of the audience who came to the meeting at considerable expense probably did not get as much benefit as they might have from this wonderful opportunity to exchange ideas.

Too bad these papers were not published in advance of the meeting and read by those interested prior to each session. With time to digest the new ideas presented, the audience would have been in a position to discuss each paper after a short briefing by its author. Most of the time could then have been devoted to discussion. Interchange of ideas would have been more fully realized.

We hope more joint meetings of international groups will be held in the future, but we wish papers could be printed and distributed in advance of all technical meetings so that more valuable discussions might take place.

To Keep Up With the Jets

NEW YORK INTERNATIONAL AIRPORT early this month became the first U. S. airport to handle scheduled commercial jet planes. Lots of discussion of engine noise accompanied the coming of the jets, but significantly there has been no undue concern over physical facilities for handling the new aircraft. There are no special loading platforms, no blast fences, no highly soundproofed and heat-proofed walls, no double-paned concourse windows. A contract has been let for the installation of a jet-fuel tank farm, but construction has not started on it.

In short, with its facilities for propeller-driven aircraft, New York International is handling jets. We therefore wonder about the immediate necessity for certain special ground installations, however desirable they might be.

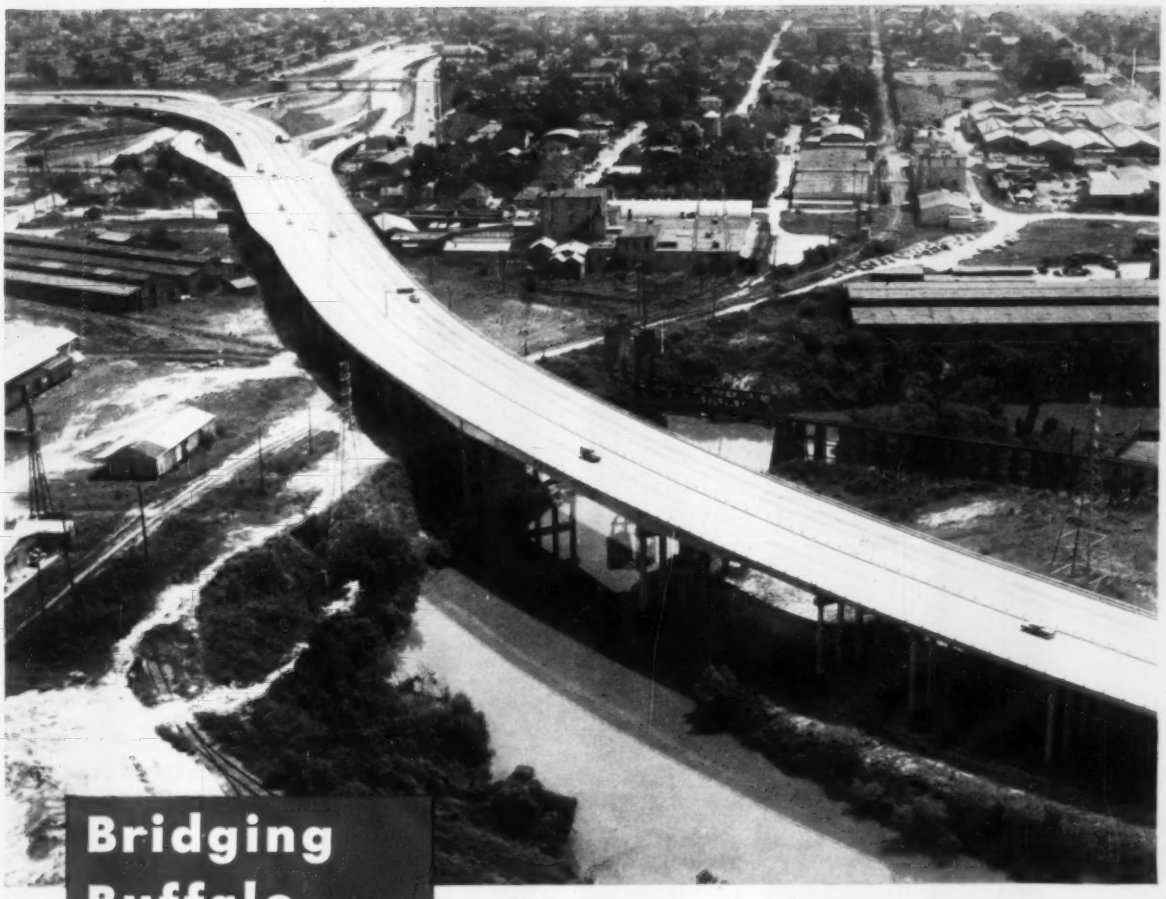
Other leading airports can learn from New York's experience. And learn they must, for the jets are coming. Indeed they have arrived. The important thing is to make adequate provision for them, perhaps leaving some of the refinements of installations to be developed concurrently with the increase in jet travel.

Well Done, B.C.

WHAT HAPPENED in Vancouver is now known. At least, there is a definite statement by investigating engineers as to the probable cause of the disastrous bridge construction accident there last June.

Buckling of webs of steel beams at the base of a temporary falsework bent was the probable reason for collapse of two spans of the Second Narrows Bridge, said the report (ENR Oct. 9, p. 24). Said the consultants: "Instability [of the bent] was due to omission of stiffeners and effective diaphragming in the grillage, and this, in turn, was due to an error in calculations."

It is certainly gratifying to be able to read definitive statements as to what happened at Vancouver relatively soon after it happened. As pointed out before on this page (ENR July 3, p. 100) the only good that can possibly come of such a calamity is a lesson. Having called for that lesson, ENR would be remiss now in not expressing the thanks of the entire construction industry for the prompt and thorough way the British Columbian government and its consultants have gone about finding the facts of the disaster and making them known.



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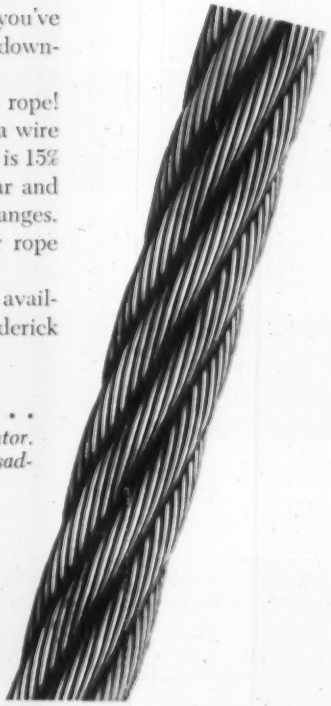

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